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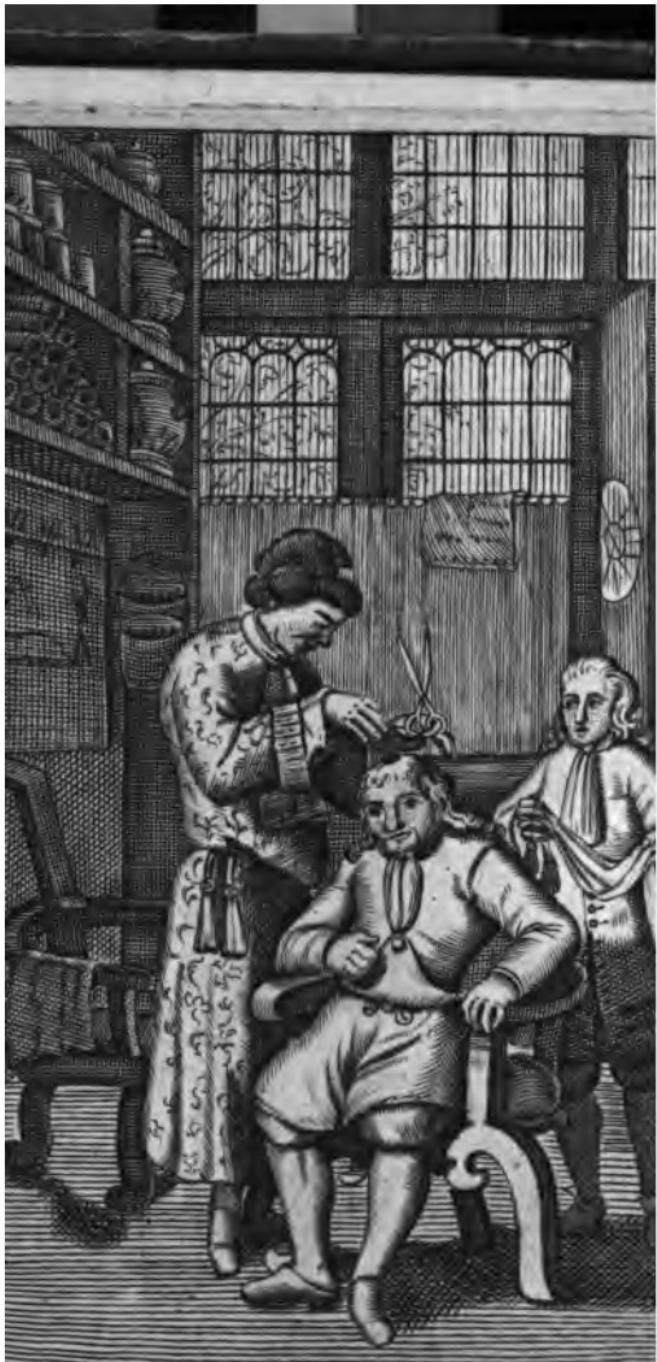


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THE *Hospital Surgeon*

O R,
A New, Gentle, and Easie Way to Cu
spedily all sorts of Wounds, and oth
Diseases belonging to SURGERY

A Discourse on Discover'd Bones

ALSO
A Way to Dres, after Trepanning, with a
New Instrument invented by the Author.

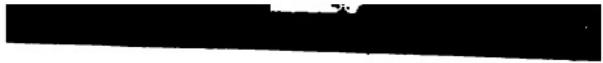
IN THREE PARTS.

- I. The Advantages of *this Way*, and Mischiefs of a contrary Practice, propos'd and confirm'd by Reason and Authority.
- II. Observations on WOUNDS of all Kinds, and in every Part of the Body; quickly Cur'd by *this Method*. With Practical Reflections.
- III. An Idea of the Author's New Practice in WOUNDS and other Cases, and his Easie and Effectual Remedies; with some Observations and Remarks.

By Mr. BELLOSTE, Surgeon-Major to the
Hospitals of the French King's Army in Italy.
The Third Edition, with Amendments.

4 A Treatise of BANDAGES, by L. VERDUC.

To which is added,
LONDON,
printed for J. & B. SPRINT and J. NICKOLSON in Lit-
toral Britain, and A. Bell and R. Smith in Cornhill. 1713.



The Translator's Preface.

WE could, possibly, have found out a Patron, had it been thought necessary, under the Protection of whose Name this Stranger might have come abroad into our English World; but as we look upon Dedications to be, for the most part, empty Formalities, as little minded by every one else, as what is said in 'em is believ'd by the Writer, so we doubt not but this Book will every where meet with a becoming Reception, seeing it is sent out on such a friendly Errand, as to heal our Sores, and pour Oyl and Wine into our Wounds.

Surgery, in consideration of the Antiquity, the Usefulness, the Necessity, and Excellency thereof, has ever been in the highest Esteem, among all those other Arts that were invented for the Service of Mankind. For the Improvement of this Noble Profession, the Author of the ensuing Treatise has been at no small Pain, having these 28 Years labour'd therein, in some of the most celebrated Countries of the World, with an unwearyed Diligence, and assiduous Application; the Fruits of whose Care and Fatigues the Courteous Reader is here presented with.

Several of the Learned and Ingenious, not only of this, but also of some former Ages, have been very sensible, that this Art was very far from

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having attain'd to that Perfection whereof it is capable ; yea, that Abuses had slipt into Practice which were unknown to those renown'd Persons, who at first were famous in this Faculty. 'Twas this Consideration produc'd that learned and elaborate Treatise of Cæsar Magatus, Doctor of Phylick, and Professor thereroof in the University of Ferrara, entituled, De rara Vulnerum Translatione, & Turundarum Abusu. To the same also we oare many other Chirurgical Compescures, that from time to time have appear'd in the World ; some finding fault with one thing, and some with another, in the Ordinary Way ; yea, some have gone so far, as universally to reject it.

It is not fitting, and would be extreamly unjust, to say any thing in disparagement of the Works of such as have endeavour'd to oblige the Publick by their Labours ; only this, we think, may be said without Offence to any, That the Book of Cæsar Magatus is written in Latin, rare to be found, and very long, and consequently of no use to the English Reader : And as for others, they have either superficially only, and transiently complain'd of the Imperfection of their Art, or then having signified to us in general the Defects of the Common Medicines and Method, don't enter into a Detail of the Reasons that make 'em miscarry in particular Cases, or make known unto us either the Name, Nature or Composition of these other Remedies which we are to use in the place of the former.

The following Treatise, which was altogether de-

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design'd for the Reformation and Improvement of Surgery, is without any of these Inconveniences. Herein the Author has discover'd to us the Disadvantages of the usual Remedies and Method, in the differing Cases that occur, by particular Reasons, drawn from the Nature and Essence of the Things whereof he discourses. He not only describes to the life the Way he would have us to take, but also, as to Wounds and some other Cases, points it out to us cloath'd with all the most minute and requisite Circumstances, in particular Instances of Cures of all sorts, done on all Parts of the Body. He gives us an Account of the Names, Natures, and Compositions of the Simple and Easie Remedies he uses, and which he has found attended with constant Success, not confining himself, or others, to one or two only, but exhibiting as was convenient a competent Variety. When he blames the Ordinary Practice, and substitutes a better in the place of it, he accompanies his invincible Reasons with several Authorities of the most considerable Authors. Moreover, he has taught us to evide the Exfoliation of Bones; and has given us a New Way of Dressing, after performing the Operation of the Trepan, with an Instrument of his own inventing.

He seems to have hit upon the right Way of carrying the Knowledge of the Art he professes to the farthest extent it can go; which is, by giving an exact History of what he has learnt therein by Experience, without vouching upon the Credit of others, whether Ancients or Moderns,

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what himself has not prov'd by a sufficient number of Trials. Had this Course been hitherto taken in all the Arts and Sciences, they had not remain'd to this day of the Dwarfish Stature we find 'em; neither had the World groan'd under the bulky Lumber of an infinite number of Useless Books, which, for the most part, are but imperfect and mangled Transcriptions from the Works of others. Had Physicians done so, their Art had not been still term'd Conjectural; nor had the ill Success and jarring Opinions of, by far, the greatest number of those who bear that honourable Name, expos'd it to Contempt, and render'd it so obnoxious to be slighted, even by the Vulgar.

But to return to our Author: All we will further say of him, is, That he is an unfeigned Lover of Mankind, Conscientious, Sincere, and Communicative of his Knowledge without Reserve; and all this accompanied with an unusual Modesty: The Truth of which desirable Character his Book will abundantly justify.

We will no longer detain the Reader in the Entry; only 'tis convenient he should know, that this Treatise, in the Original, is printed with the Approbations of some of the most eminent Physicians and Surgeons in France, which are omitted in this English Impression, that was designedly contriv'd into this small bulk for the greater Convenience of the Reader; of whom all we have to demand in behalf thereof is, that he would Read, Try, and Judge.

THE

T H E P R E F A C E.

I Am sufficiently convinc'd of the Truth of what is deliver'd by *Hippocrates*, in his *Aphorisms*, that *Life is short, and Art is long.* And indeed it appears extreamly difficult, for one Man duly to acquit himself in the Practice of *All the Parts of Surgery*; the Capacity of the *Mind* seems too limited to be able entirely to grasp so extensive an *Art.*

Tho' I have, for these Eight-and-twenty Years past, practis'd *Surgery* under different *Climates*, and in divers *Hospitals* of the *Army*, yet I am so far from thinking to have attain'd to the Knowledge necessary in this *Art*, that I own my self scarce to have had the Time to improve, and make some Remarks on the Curing of Wounds, to which chiefly I apply'd my self.

However, having had many Opportunities of discovering the Mischiefs occasion'd by the Use of *Tents*, and by the *Long and Painful Manner of Dressing the Wounded*, and often *uncovering their Wounds*; I was mov'd to Compassion by their Sufferings, and thought my self oblig'd in *Conscience* to give my Advice herein. Besides, seeing all Men are allow'd

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the liberty to speak their mind with reference to the *Arts* they profess, I see not why I shou'd be abridg'd the Privilege others assume to themselves, possibly on much slighter Grounds.

'Tis not to be question'd, but among the great number of *Surgeons*, wherewith *France* abounds, some will applaud the Excellency of my *Method*; but I am apt to think it will not please all. I hardly ever knew any that practis'd *Surgery* as I do, and there are few of all the celebrated *Authors* we have, that deliver any such *Doctrine*; which, being contrary to the Practice of many *Surgeons*, will not, from the most part, meet with the Reception it merits.

'Tis a noble thing, said a *Wise Philosopher*, to be evil spoken of for doing well: There is no cause then, why any shou'd be ashamed to communicate to the *Publick* what he has learned, when the *World* may reap any Advantage thereby. Nothing is so inconsistent with *Christian Charity*, and that *Love* we owe to our *Neighbour*, as to refuse to let him light his *Taper* at ours. *Knowledge*, like *Light*, may be imparted and not lessen'd.

It is not my Design, by this *Method*, that possibly will appear to be new, to destroy the *Foundations*, and *principal Rules* left us by the *Ancients*, concerning the *Curing of Wounds*: I am willing only to make known my *Observations* on this Subject, and to point out what I've perceiv'd to be pernicious in the ordinary *Practice*: without to shew what is certain and

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the Method I my self have follow'd al Years ; which, I hope, will be so e more useful and reasonable, as it is on the Principles of the Circulation.

it is a pretty bold Attempt, to go suppress Tents, which have been us'd Ages ; and I am not ignorant, that on many Occasions, has the Force of But notwithstanding all this, I de-tain't the Privileges of Nature, and beyond Contradiction, that Reason & Experience are on my Side ; tho' at the same time, I run the Hazard of being univer-sur'd for the Newness of my Method.

I altogether condemn Those, who first Inventors of Tents, Dilatets, and They have had their Reasons for using them : I have Mine for laying them aside. These have formerly been employ'd in and Surgery, which now are no more used. The receiv'd Rules, the Order of Curing, the Application of Remedies, have been from time to time : That which is new, will one day be ancient, as what ancient was once new.

True, the Ancients did lay the Foundation of Surgery ; they have said many things, well ; neither was their Knowledge complete to the Subject. They had the honour of writing, but have left that of bringing to posterity. However, it is not to be denied, but that they took all requisite Care

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Care to avoid being deceiv'd, and to inform themselves of the *Truth*; but if they had All, Nothing had been left us to do.

Add to this, that if that *Prepossession* of the *Ancients*, and the *blind Submission* to their *Dictates*, had not been laid aside; had not seen the great number of skilful *Musicians* and *Surgeons* which this Age hath produc'd; who, after having shaken off the technical *Yoke of Antiquity*, found out Things less Necessary than Curious, that others would have remain'd till now in Obscurity, and had possibly been unknown to *Posterity*.

Wherefore, it is not impossible, that in the Active Part of *Physick* also, which is *Sufficient Experience*, and continual *Diligence*, may have discover'd *Abuses*, that had got into *Practice*, and were authoriz'd by *Citizens*.

It can't be deny'd, that what belongs to the *Fabrick* and *Constitution* of the *Body* of Man, always was, but yet it has not ever been equally known. The *New Discoveries* have made a considerable Change in the *Knowledge*, *Judging*, and *Cure* of *Inward Distempers*; and I see no reason why there ought not also to be some alterations in the *Cure* of *Outward Diseases*, especially those of Wounds, which depend upon the same *Principles*, and have the Advantage of the same *New Inventions*.

I suppose it will not be thought strange, after I have labour'd for the space of fifteen Years in *Hospitals* of the Army,

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have made some Discoveries in the Curing of Wounds: For Use we know compleats a Workman. I have formerly seen the most Part of France, I have travell'd over a Part of Germany, and all Italy, but have hardly found any Place where Tents were not in Use: Several there are who find fault with them, but few will give themselves the Trouble to lay them aside. Some before me have written against 'em; but, I believe, I have been the first my self who had the boldness entirely to suppress 'em in Practice, except only in case of excessive Bleeding, and in some First Dressings.

Hippocrates, Galen, Celsis, Fabricius ab Aquapendente, and many others cited in this Treatise, have been very near of my Opinion; and I have quoted some Passages of these famous Authors, that countenance my Method. I have instanc'd in some Places, out of Ambrosius Pareus, as being a well known Author, and celebrated for the Cure of Wounds; but it appears, by the Remarks I have made, that he is inconsistent with himself in many Places of his Works; which can't chuse but perplex the Mind of the young Surgeon.

Jacobus Marcus in his Preface to the Summary of Bandages, quotes Septalius, a famous Physician of Milan, and Casar Magatus, a renown'd Professor in the University of Ferrara, who, as he say's, condemn'd the Use of Tents and the two frequent Dressing of Wounds; and adds, that to this Method they had suited th

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Practice in these two Cities for a long while.

I know 'tis not length of Time that can give a Value to Things ; it is only their own Excellency ; and every Thing must once have a Beginning. I hope therefore, if my Reasons are approv'd, and some Credit given to my Experiments, none will judge it necessary to wait till an Age is expir'd before they will list themselves on my Side. I know not whether my Reasonings will be of Force enough to perswade, but the infallible Proofs I have given of the Goodness of my Method, in the great Number of Cures I have wrought thereby, will, I hope, suffice to convince the Publick.

I grant, it is difficult at first to come over to the Opinion of another, when it is contrary to our own ; but when the Life of Men is concern'd, we ought not to delay one Minute to free our selves from Error, and to put off those Prejudices that often hinder us thorowly to penetrate into the Truth of Things. The Opinions we receive in our younger Days, and the most part of the Maxims we take upon trust from the Ancients, are ordinarily the Cause of the false Steps we make in the chief Concerns of our Calling. The Life of the Wounded is indeed in the Hands of the Surgeon, who has him under his Care ; wherefore he ought to use all Diligence, not only to attain a competent Measure of Skill, but also to find out a Sure and Speedy Way of curing Wounds. It will be objected to me, That a great num-

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ber of wounded Persons have been, and are every Day cur'd with the Use of Tents, and also by following the *Ancient Method* in all its Circumstances. I answer, 'tis true: And if all those who are dress'd after this manner were in danger of being lost, it would be downright *Malice* and *Cruelty* to use it; neither had my Endeavours been at this time needful to suppress it, since it would have been rejected long e'er now: But this I affirm, after I have made Tryal of both the *one* and the *other Method*, and have carefully consider'd the Difference between 'em, that those who are cur'd by that of the *Ancients* have need of a healthful Constitution; besides, it is never without Danger, much Pain, and requires a great deal of Time; all which Inconveniences are avoided by embracing that which I propose.

In this *Hospital* we have by this *Method* cur'd *Wounds* of divers sorts, having had *Wounds* of all *Parts* under our Care: Wherefore this happy Success can't in Reason be ascrib'd to the Temper of the *Air*, which in some Places is favourable to certain *Parts* of the *Body*, as hath been observ'd by *Guy de Chauliat*, who speaking of *Wounds* in the *Head*, says, that they are more easily cur'd at *Avignon* than at *Paris*; and that those of the *Legs* are cur'd sooner at *Paris* than at *Avignon*. The *Air*, I confess, where I am, because of the Situation of the Place, is not so replenish'd with gross Parts as in plain and low Grounds, but still 'tis hurtful to Wounds.

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both by reason of the *Nitre* wherewith it is stor'd, and because of its Activity and Penetration : But I have never yet been able to remark, that it was either more beneficial or hurtful to one Part than to another ; and I have always us'd all possible Precaution to hinder its Access to all *Wounds* whatsoever ; as will appear by the Sequel.

I shall not in this *Treatise* discourse of the *Nature* and *Differences of Diseases* that belong to *Surgery*, this is already sufficiently done to my hand by others ; and the learned M. *Verduc*, Doctor of *Physick*, hath lately oblig'd the Publick with a compleat *Peice of Surgery*. I will therefore concern my self only with my own *Practice* ; and if any thing else chance to fall from my Pen, it will be only what I thought necessary for *Understanding* my *Subject*.

Tho' in many places of this *Book* I advise the Use of *general Remedies*, and a suitable Course of *Diet*, among the *Diversions* necessary in the curing of *Wounds*, yet I don't pretend to assume to my self what belong to *Physicians*, according to whose Directions they ought to be us'd ; but I wrote in an *Hospital*, where the whole Ordering of the *Wounded* was altogether committed to me. It shall ever be a *Law* to me, especially when the Occasion will allow, to keep my self within the *Bounds* of my *Professio:..* That Man who woud acquit himself in his *Employment* as becomes him, will find enough to do, tho' he

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keep himself to what properly belongs to *Surgery*: And those who pretend to know all things, most commonly know nothing at all. But after all, I judge it highly advantageous for a *Surgeon* to know, on certain *Occasions*, how to make a seasonable use of general Remedies, as well as of Topicks, Vulnerary Drinks, &c. For *Opening* of a *Vein*, a *Potion*, or a *Clyster*, when seasonably administer'd may save the *Life* of a wounded *Person*, or at least prevent many *Accidents*.

I have divided this little *Treatise* into three *Parts*: In the first, I treat of *Tents*, and the Mischiefs that always accompany the Use of 'em: After I have made it appear, that the *Air* is pernicious to *Wounds*, I add a Dissertation on *Uncover'd Bones*: And then I describe my Way of Dressing; after performing the *Operation* of the *Trepan*, with a *New Instrument* of my own Invention.

The second Part contains a *Collection* of some *Cures* that I have done, according to my Method, with a *Reflection* after each; which I justify by the *Authority* of several *Citations*. There wou'd be reason to think that I had accommodated *Nature* to my own *Sentiments*, and the *Success* of my *Practice* might be call'd in question, if I had not related many very important Experiences, and such as were publickly perform'd: For, without doubt, the establishing of a new *Method*, as I have already said, is a pretty bold Attempt, especially

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in a Time when *France* seems to have advanc'd *Surgery* to the highest pitch of *Splendour*, but particularly *Paris*, to which I owe my *Birth* and *Education*: Knowing therefore that *Experience* is much more convincing than *Reason*, I have quoted several *Cases*, and given a brief *Account* of several *Cures*, in a *Manner* as *Natural* as possible.

The third Part will be no less useful to the *Young Surgeon* than the other two; 'tis a general Idea of my *Practice*, with some *Observations*, and a description of the simple *Remedies* I use in the Cure of *Wounds* and *Diseases* belonging to the Province of *Surgery*: Their *Vertue* is sufficiently attested by the advantageous *Effects* which they produce; and the greater number of Patients cur'd by their Means, ought to gain them some *Repute*.

I have done what I could to give this Book a plain and easy *Style*: If the Language is not fluent, nor the Expressions inviting, and agreeably order'd, it ought not to be surprizing: *Simplicity* and *Plainness* best becomes the *Truth*. A Book written in an *Hospital*, in the middle of the *Alps*, without any *Assistance* or *Advice*, and which is founded only upon *Practice*, neither can, nor ought to be attended with vain Embellishments of *Eloquence*. In a Word, I expect to persuade not so much by what I can say, as by what I have done. I hope the Reader will take in good part this *Essay*, and will not condemn a *Design*, the only Aim of which is, *The Glory of GOD, the Comfort of the Afflicted, and the Perfection of Surgery*.

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The

e Hospital-Surgeon :
OR,
*, Gentle, and Easie Way, to
speedily all sorts of WOUNDS.*

P A R T I.

*ewing, by Reason and Authority, the
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f'e of the Trepan.*

C H A P. I.

*Four Ends propos'd in the using
of Trepan*

Thoughts theron ; which also we will confirm by Reason and Authority.

Fabritius ab Aquapendente, in his 8th Chapter *Of Wounds*, reckons up only three Uses of Tents ; but many after him makes mention of four. One is to keep open the Orifice of the Wounds : Another to carry the requir'd Medicines to their Bottom : A third, to further the coming away of Extraneous Bodies : And a fourth is, to drink in as it were, and to retain the Filth and Excrements therein generated.

Our Design is at present to consider, whether these Ends, so far as they are expedient, may not be obtain'd without the Assistance of Tents : For I would not be thought, without Reason, to make any Change of the Order receiv'd in managing of *Wounds* ; nor rashly to lay aside any thing that might conduce to the Relief of the Wounded, or facilitate and shorten the Cure.

C H A P. II.

Of the First End of Tents.

IT is unquestionably certain, that *Nature's* Endeavours are ever bent towards the supplying of what has been taken away by violent means from our Bodies, and uniting the Divisions made therein : We ought not therefore to

keep open the *Orifice* of a Wound, but if needful, it may be widen'd at the first Dressing; and thereby what is design'd in the first Use will be sufficiently attain'd. However, I don't altogether disapprove of the Use of *Dilaters*, and sometimes of *Tents*, when they are required to contain and support Astringents, to stop the Bleeding, or to hinder the Reunion of fresh Incisions, that sometimes are necessary in the first dressing of *Gunshot Wounds*; especially when there is any suspicion that *Extraneous Bodies* are lodg'd in the Wound, or some Splinter of a Bone that Nature is not able to reunite. But *Tents* are not only useless, but extremely hurtful, particularly in *Gunshot Wounds*, that of themselves are oftentimes sufficiently enlarg'd by the coming away of the bruis'd Flesh, commonly call'd the *Escar*; before which we need not fear the closing up of the Wound.

It was never known that a Wound did fill up, while any *foreign Body* remain'd within it. Now the *Escar* is an *Extraneous Body*, in regard of those Parts to which it immediately adheres, and must therefore of necessity be separated from them: Moreover, *Nature* can't effect a Reunion of the Flesh till first she have free'd her self of what keeps asunder the Parts to be joyn'd.

Fabricius ab Aquapendente is of the same Opinion, *Part I, Book 4, Chap. 9.* where he

says, that Nature never cures a Wound, so long as any thing is in it that offends her.

I do believe there is no-body but will grant that the Separation of the *Escar* is a Work of Nature, that is most speedily perform'd where the Natural Heat is most vigorous: Now, seeing new Flesh is bred easiest at the Bottom of the Wound, 'tis there also where it first begins to fill up; and therefore the Orifice is last of all freed from the *Escar*, and supply'd with new Flesh: for which Cause we have no Reason to fear its sudden closing; neither does there appear any necessity of using *Tents*, to avoid that Inconveniency.

As for Wounds made by sharp Instruments, they have no need of *Tents*, seeing they don't want to be dilated, but only to be clos'd up: Now what thwarts Nature's Intention not only may, but ought to be laid aside.

Finally, *Contused Wounds* can't be united, till what is bruised is remov'd either by the force of the Natural Heat, or the Application of Dissolving Medicines, or by Suppuration: and consequently it appears, that in this Case also, as well as the others, *Tents* may be forborn, and so the first *End* propos'd in using them is not to be allow'd.

CHAP. III.

Of the Second End of Tents.

Here will be no need of a great many Reasons to demonstrate, that it is an y matter to make the Remedies pass to the *bottom* of a *Wound*, without the Assistance *Tents*; for to this Purpose nothing more requir'd, than to give a pretty soft and thin insistence to those *Ointments*, *Balsams*, and ier suchlike Remedies, as are commonly d in curing of *Wounds*.

When a simple Division is made in a health- and well-temper'd Body, Nature stands in need of any thing else, but the *Natural Jam* of the Parts, or the *Nutritious Juice*, order to procure a Reunion, especially if in fleshy Parts, in which Case the *Tents* *Ointments* do only irritate the *Parts*, cause xions of *Humours*, putrify the *Flesh*, alter *Nutritious Juice*, and so occasion long very great Suppurations, which rather der than promote the Cure.

CHAP. IV. Of the Third End of Tents.

THAT the Discharge of the *Extraneous Bodies* is at all furthered by *Tents*, is a thing not to be imagin'd: Yea, on the contrary, we have more Reason to believe that they conduce very much to retain them. For supposing that any thing remains in a *Wound*, as a *Bullet*, *Pieces of Bone*, or *Cloaths* or *Wad*, &c. it is almost impossible ever to draw it forth at the same Place by which it enter'd, unless it be at the first or second Dressing: And this happens very seldom, tho' never without great Pain, and much Time or Trouble.

There is no Probability that a Body so heavy as *Lead* can remain for any considerable time in one Place, unless it stick in some *Bone* or *Joynt*. The *Flesh* has not solidity sufficient to detain the *Bullet*, but gradually yields to its descending Weight: and supposing it did not stir of it self, yet so far wou'd a *Tent* be from furthering its coming out, that it would rather fix it faster, and push it deeper into the *Wound*: Now the *Matter* ever follows the *Bullet*, and makes to it self one or more *Cavities*; it gathers together, increases, ferments, and comenly brings *on a Fever*; the Part is weaken'd, the Body wasted,

I ; and, in fine, the wounded Person freely is brought to an untimely End. The Accidents may also be produc'd by the Break of a Bone, or some such other thing, in the same manner. Hence it is, that on first Suspicion, whether from the Complaint of the Wounded, or any other Appearance of a foreign Body remaining in the Wound, Search is made thereinto with Instruments, and with the Fingers, but for the most part to no purpose, as I have often seen and all this to satisfie themselves, and without the By-standers and to the Patient no Diligence has been spar'd to further the Cure. This Method is no less hurtful and cruel, and by exasperating the Parts,

Fluxions, and brings on Putrefaction, oftentimes incurable Fistula's. But when these aforesaid Means fall short of Success, the lower Part is sought out, therein to make a counter-opening, which sometimes, in the Patient is of a strong Constitution, effects the Cure.

pieces of Garments, of Wad, of Linnen, are often carried by the Bullet into the Wound, and there remain after it is drawn, being deeper lodg'd : These things are too capable of occasioning trouble and Accidents; and Tents conduce not at all to keep them there, by obstructing the Passage whereby they might be expell'd.

It is certain, that a *Tent* always swells in the Wound, and filling up the *Orifice*, keeps in the *Matter*, which not being longer ~~so~~ to be contain'd within the narrow Bounds of the Wound, spreads it self into the neighbouring Parts, glides between the *Muscles*, and carries along with it the *Extraneous Bodies* which are there corrupted and putrify'd, and infecting the Wound, occasion Mortifications, or Abscesses very hard to be cur'd.

I say then, to conclude this Chapter, that it is altogether in vain to use *Tents* with a Design thereby to facilitate the Discharge of *Foreign Bodies*; and that they rather conduce to keep them in, than assist in furthering their Passage. But if by Chance it should fall out, as sometimes it does, that the Wound closes up when there is some *Extraneous Body* within, it will occasion an Abscess, either under the ancient *Escar*, or somewhere else, more convenient for *Nature*, by the opening of which only, whatever is hurtful and unprofitable will be discharg'd.

As for Leaden *Bullets* that have not been drawn out at the first Dressing, their remaining in the Parts can do no great hurt, because they are friendly to *Nature*; and in process of Time, by their own Weight, slip down between the *Muscles*, and often appear

pear under the Skin, from whence they may be taken out, without either Trouble or Danger. The most Part of Surgeons are convinc'd of the Truth of what I say : Only this I must acknowledge, that we ought to endeavour to draw forth such Bullets as are either lodg'd in a Joynt, or in hazard of falling into some Cavity of the Body ; as that of the Scull, of the *Thorax*, or of the lower Belly, where they might be irrecoverably lost.

C H A P. V.

Of the Fourth End of Tents.

AS for the fourth pretended Use of *Tents*, I grant that they are always soak'd with the Moisture of the Wound ; but as they retain that Humidity, not suffering it to pass out, so they are thereby swell'd up, and enabled to intercept the Passage of all the other Matter that is generated : Now I would willingly hear a Reason for keeping in a Wound Excrements, which Nature is so sollicitous to throw out ; for being corrupted by their abode, they alter and destroy the Constitution of the Parts that contain 'em. Seeing then the longer the Matter is detain'd, the more it is deprav'd, I am

perswaded 'tis much better to give it a free Passage, not interrupting its Course, than to shut it up with Tents, and force it to take other ways.

Having therefore demonstrated, that the Ends that have been design'd by the Use of Tents, in so far as they are for the Advantage of the Wounded, may not only be attain'd without 'em, but are really hindred thereby, I will endeavour in the following Chapter to take the part of Oppressed Nature, and to assert her Liberty by Reasons founded on the Circulation of the Blood, and supported by the Authority of many Authors.

CHAP. VI.

Consequences deduc'd from the preceding Chapters.

Nature hath been diversly defined by Authors, *Julius Alexandrinus* calls it *The Author, the Principle and Efficient Cause of Natural Beings*. In this Sense it is regarded in Physick as the Cause of Health, and the Physician of Distempers; and is by *Van Helmont* consider'd in three different States; *so wir*, either in its full Strength and Vi-

gour

gour, or as impair'd and weaken'd, or as altogether oppress'd and prostrate.

These things might be apply'd to our present Purpose ; however, that I may give a more clear and intelligible *Idea of Nature*, which may better suit with outward Diseases, I shall look upon her as the *Chief Worker of whatsoever concerns our Health* : and I am perswaded, seeing she has fram'd every thing according to the Law of their being, she will also maintain them in their necessary *Union*, unite them when divided, and in a Word, restore them to their first state, when any way fallen from it.

This *Union* is so necessary for maintaining *Health*, and preserving *Life*, that all, or at least the most part of *Diseases*, proceed from a Defect therein : For things of a sovereign Quality are one Way or other mix'd with the *Humours* of the Body, which disordering and interrupting the *Union* of their Parts, change and deprave the good *Temperament* and Qualities of the *natural Balsam*, called *Radical Moisture* ; and from hence come *Diseases* and *Death*.

In outward Maladies also, and in Divisions of the harder or softer Parts of the Body, manifest to the external Senses, it is plain, that *Nature* suffers, and consequently must strive with all her Might to re-unite the divided Parts. The Surgeon, as her faithful

faithful Minister in curing Wounds, ought to employ his utmost Care to assist her while she labours to effect that so necessary Union. To this End he should not only leave her at Liberty, putting no Hindrance in her Way, but also free her from whatever may thwart her Design. Finally, must assist and imitate her, mind her Ininations, observe her Proceedings, and follow her as it were step by step, that he may ever ready to lend her his requir'd Help.

The Art of Physick turns upon this Principle, that Nature has the chief Hand in curing Diseases; 'tis with her the Physician ought to consult, and without her Consilium as it were he ought never to do or undertake any thing: And, in a word, he only is ablest Physician, who has most earnestly apply'd himself to the study of Nature.

I acknowledge, there are many Cases wherein Nature alone is not sufficient, and in these she must be help'd out by the Hand of Art: as in the drawing out of Extraneous Bodies from Wounds, cutting off mortify'd Parts, opening Abscesses, restoring broken or disjoyned Bones, and other like Operations belonging to the Province of Surgery. But let a Surgeon be never so superficially acquainted with Nature, he may easily perceive, that by Tents and Dilatations she is oppress'd, depriv'd of Liberty of action,

ing, and directly oppos'd in her Design, which is to re-unite the divided Parts.

Fabricius ab Aquapendente, whom I mention'd before, asserts, that *Nature never cures a Wound, so long as any thing is in it which she can't retain*: For in this he is agreed with the most Judicious, that 'tis Nature that works the Cure; and at the same time shews, that a Tent is such an Enemy to her, as neither ought nor can be us'd but to her hurt and destruction. *Galen* also, in his third Book of Method, says, that 'tis not the Remedies, but Nature that closes up the Wounds.

Wherefore, Experience having convinc'd me of this Truth, I set my self to consider *Nature's Designs*, her Inclinations, and the way she takes to effect the Cure of Wounds; and have observ'd, that *Tents* do ever oppose, and prove a Hinderance to her. 'Tis every Day to be seen, that *Nature* can suffer nothing foreign to abide with her; she endeavours with all her might to free her self from *Tents* and *Dossels*, with which Wounds are ordinarily cram'd up: For tho' they did not occasion Pain, as we may be well assur'd they do, yet being *Extraneous Bodies*, *Nature* can't endure them without trouble; and let them be never so small or soft, they must necessarily press always upon some *Vessels*, of which the Body is nothing else but a Contexture.

According to their bigness and hardness *Tents* do more or less disturb the course and order of the Circulation of the *Blood*, so far as the Wound reaches: They squeeze ou the most subtil part of that, or other Li quors contain'd in the Vessels they pres upon, which by the Matter already in the Wound is converted into its own Nature and becomes a Ferment; that being retain'd grows hot and corrupt, and so alters the containing and neighbouring Parts, and oftentimes imparts its vicious Qualities to the Mass of Blood, by Vapours sent into the Veins; yea, the Matter it self is suck'd up by the Veins, their Orifices being dilated by its Fermentation, Moisture, and Stay; and this circulating with the Blood, entirely corrupts it, and causes Fevers that end in Death, unless Nature, by some critical and healthful Motion, throw out the Corruption.

Ambrosius Pareus in his ninth Book, treating of Wounds, Chap. 5. forbids the Use of *Tents* in few Words, being therein supported by the Authority of *Galen*, who in the fourth Chapter of his *Methed*, affirms it to be necessary in all Wounds, whether simple or compound, that nothing be between their Lips that may hinder Re-union. The same *Pareus*, in his ninth Book, Chap. 7. recommends the Use of long and thick *Tents* in the Be-

Beginning, and afterwards advises to make 'em more thin and short; but does not here forbid their Use. In the same Book, Ch. 15. he takes the part of *Tents*, in opposition to a certain Physician, that had written against his *Method*.

These differing and contradictory Opinions in one and the same Author, must of necessity throw the young Surgeon into perplexing Doubts, so that often he can't know what is best, or what Way is most secure. 'Tis certain however, that the Mischief of *Tents* was known to *Galen*, because he forbids their Use; and also to that Physician who found fault with the Practice of *Pareus*; his Name I know not, but by the Acknowledgment of the same Author, he altogether lays aside the use of *Tents*, and orders to dress a Wound but once in four Days. This Method therefore is not so new as at first I thought with my self, for I had form'd my Design before I was aware of what I have here quoted; and it was *Experience* only that opened my Eyes.

Galen justifies further my Opinion, in his third Book of *Method*, and ninth Chapter; when he says, that in every Wound there are two sorts of Excretions, a gross and a subtil, which, as he affirms, hinder the generation of Flesh. Now if this be so, it is very preposterous to keep them in the Wound with

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with *Tents*. If it be said, that the *Tents* may be made so little, as not altogether to fill up the *Orifice*, nor hinder the *Passage* of the *Matter*; I answer, that tho' they be made never so small, yet will they fill up the Mouth of the Wound; because they ever swell up to the bigness of the Space they are in; But supposing the most subtil matter to escape, yet the more gross and clammy is by them retain'd, and is enough to occasion grievous Accidents. Now, if small *Tents* prove such a hindrance to the curing of Wounds, what may be expected from those that are long and hard, and pass to the very Bottom? And yet these also are used by many Surgeons, who for want of applying themselves to the Consideration of *Nature*, and her Intentions in the curing of Wounds, continue to follow a Method that is both cruel and destructive.

Tents, *Dilatets*, and *Setons* always occasion Disorders in the Places where they are apply'd; if they touch the *Nerves*, they cause extremity of Pain, that is often the Original of many Evils, and follow'd by many grievous Accidents, such as Convulsions, loss of Sense, &c. If they bear upon a *Tendon*, its Action is hurt, and Motion ceases: If they press the *Vessels*, as they almost ever do, the Circulation of the Blood is disturb'd.

But

But suppose a Tent should only press together the * Fibrous Papille that compose the Skin, which * Mamelons are of a quick sense, being the Fibreux.

Instrument of Touching ; this alone were enough to disturb the Order and Distribution of the Spirits, which now moving in a tumultuary way among these Fibrous Papille of the Skin, contract them by the irritation and pricking which they cause. Now the Fibres being shortned, and the Skin contracted, the Vessels must of necessity be doubled or squeezez'd together, and consequently the Circulation diminish'd, or entirely suppress'd. In these Cases there is not so much Blood carried back by the Veins, as was brought by the Arteries : Now, if the Circulation is altogether stopt, a Mortification ensues ; if considerably diminish'd, an Abscess ; but if the Humours ouze into the Wound from the Capillary Vessels, large and tedious Suppurations are occasion'd.

The Hardness and Swelling are caus'd by the Matter that is stopt and diffus'd about the place ; and therefore all the Accidents are more or less grievous, and vary according to the force of the Compression, the quantity of diffused Matter, the good or bad Disposition of the Blood, of the Humors, or of the Part affected, and the different Degrees of the Natural Heat, which hastens

or

or keeps back the Fermentation and Putrefaction.

From what hath been said it appears, that the Blood and Humours are not carried or attracted (as some Authors love to speak) to the afflicted Part more abundantly than at other times, altho' the Spirits run thither in much greater plenty. On the contrary, it is evident enough that the Blood circulates less in the wounded, than in the sound Parts, because it moves with greatest ease in these latter : And it is a Law of Nature, that a Body in motion always moves towards those places where it finds least Opposition.

The Truth of this is clearly demonstrated by the Accidents, which some time ago follow'd on certain Malignant Fevers, in Places not far distant from hence. They caus'd an Obstruction, and Swelling in the lower Belly, so considerable, that the Circulation was stopt, and a *Gangreen* ensued : But on the contrary, the Blood was violently, and in too great quantity, carried upwards ; it could not be contain'd within the Vessels, broke thro' all Obstacles, and caus'd sharp Pains, Abscesses, Deliriums, and Death.

Upon a serious view of the Accidents that most commonly attend Wounds, I believe that for the most part they proceed

from

from the Disorder of the Circulation of the Blood, occasion'd by broken pieces of Bones, Bullets, or some other foreign thing remaining in the Wound. Tho' these things are not of such a Figure as to cause an Irritation, nor can of themselves produce any Putrefaction, yet they commonly bring on Abscesses. We ought not then to ascribe these Accidents to *Pain*; for sometimes they come without it; and this often is present where those don't happen. But I am of Opinion, that these Extraneous Bodies press the Vessels that are dispers'd, through the place where they are, and stop the Blood, which slipping into the Pores and Spaces of the Flesh, by its stay and fermentation, is there corrupted, and chang'd into the Matter of an Abscess.

'Tis true, Leaden Bullets, or other things of a like nature, have been long in the Body, and yet no Abscess hath follow'd; but this may be attributed to the largeness of the Place wherein they happen'd to be lodg'd, so as not to occasion any Disorder; or because, sliding between the Muscles, they did not hinder the Course of the Humors. The other Accidents that ordinarily attend *Gunshot Wounds*, are also occasion'd by the Defect of the Circulation; as I shall observe in the sequel of this Discourse, where it shall be made appear, that Tents and Dilators &

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in this sort of Wounds, hinder the fall of the Escar, the dissolution of what is bruised, and the passing out of whatever ought to be brought away.

This will, without difficulty, be granted by those who well understand the Course of the *Blood* and *Humors*, and the Union and Order of the Parts that compose the Body. All the Parts are so united one to another, that the least Separation can't be made without Pain, Effusion of some Humor, or some other Disorder. Experience shews, that it is not only the Air that rots the Bones, but also the Nourishment of the Nervous Parts, when it is alter'd by a malignant Acid, and generally any Matter that has Acidity enough to cause a Fermentation and Corruption in the place of its abode, when kept in by Tents or other such Obstacles.

Tho' Doleus, in his Surgery, is not altogether against the using of *Tents*, yet he shews, that we ought to do it with great Caution: From whence it appears, he judg'd them dangerous.

Etmullerus is of the same mind, in his *Physical Surgery*, where he joyns such Accidents with the Use of *Tents*, as ought to affright those who make use of 'em. He advises the using of *Pledgets*, and quite to lay aside *Tents* in Wounds of the *Nerves* and *Tendons*, and in those of the *Joynts*. Hence it appears that

his Author was no great Favourer of ; for which reason he orders the Use : *Vulnerary Balsam* in the Cure of Wounds ; which promotes the generation of flesh, and causes a speedy Union ; to which the Use of *Tents* is directly con-

the famous Physicians who have treated of Surgery, and the Curing of Wounds, all nigh of the same Opinion. I could call up a great number, if I thought that I have adduc'd were not enough. It is, as I have said in the Preface, that *Casius* and *Magatius*, both Renown'd Physicians, that practis'd Surgery in *Italy*, followed this Method for the space of 40 Years, with very good Success.

Caufape, Doctor of Physick, in his Observations on the frequent Use of Bleeding, rather discards the Use of *Tents*, with many Reserve. He supports his Opinion by Reasons, which I thought of before his came to my Hands : But we may be assured that Author did not write on this Subject ; he was fully convinc'd, by his own Conscience, of what he advanc'd. It would be unpardonable Rashness for one to write and maintain that, of which he doubted the truth, and to establish a Method on false Principles.

I very

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I very well know that many will c what I advance on this Subject, which common Fate of all Opinions that : new; but of this Matter *Experience* o the most competent Judge, whose Te ny shall be deduc'd at large, and wi Faithfulness, in the Second Part o Work.

In this First Part I make account suff ly to explain the Reasons that oblig to lay aside the Use of *Tents* and *Dil*. I can't approve their Proceeding wt 'em because others have done so, or be the Ancients have order'd it. The Gl Blame of the *good* or *ill* Success, say accrues not to us; we have Custom and Riquity for Our Warrant. But *Art.* *Sciences* ought never to be shut up within narrow and unequal Bounds, *Know Reason*, and *Experience* would be inju the highest degree, if we should impose them such severe Restrictions, and take 'em that Liberty, which should last eq with the World.

C H A P. VII.

Reasons to demonstrate the Mischief of Tents.

Many of the Ancients, and some of the modern Writers, have spoken of *Tents*, as Things indifferent ; such Authors I mean as having written of Surgery and the Cure of Wounds, seem to have brought these things to some perfection. They leave it to the Discretion of the Surgeon, either to use them or not, according as they judge convenient : They did not think this Matter of such moment, as to require their Attention ; they look'd on these Means with unconcern'd Eyes, referring themselves thereto to the Honesty of those who first wrote of 'em. 'Tis apparent they had not observ'd, as I have often done, the Mischiefs occasion'd by *Tents*, the Use of which destroys indifferently the Vulgar with Persons of Merit, whose loss in a State is always to be regretted.

We need not be surpriz'd at what we see happen every Day, in the Cure of all sorts of Wounds ; 'tis not at this time only that one thing has been taken for another. Our Knowledge is not so great as to reach to all necess-

necessary Truths ; nor do we perfectly understand the Causes of all the Accidents and Disorders that follow upon Wounds ; all those who have treated on this Subject have endeavour'd to explain 'em according to their Opinions, as I have done my best to accommode 'em to mine : But Occasions are now frequent enough, and therefore it will be easie for any one to inform himself of the Truth, and to distinguish who are in the right, and who not.

M. de la Charriere, in his *Book of Operations*, discoursing of Wounds, advises carefully to wipe away all the Matter of a Wound, and to fill up even the very least Corner with Dilatets or Dossils, to hinder its staying, lest it should be suck'd up by the Veins, and carried by the Circulation to the Heart. The same Author adds, That the Air is a most powerful Enemy to Wounds : Nevertheless it is impossible to dry up the Matter with all that Exactness he requires, what Diligence soever be us'd, without taking up some Time, during which the Air will do inevitably more harm than the Matter which therein might have remain'd ; which often is not endu'd with all these ill Qualities, one is apt to imagine ; as shall be made to appear in the Fourth Chapter of the Last Part of this Treatise.

This

his Author acknowledges that in *Contusiones* a little extravasated Blood squeezes together the Vessels, interrupts the Course of Blood and Humours, and causes Fluxions and Inflammations. What then may be expected from a like Quantity of *Dossils* heap'd upon another? They increase the Divisade in the Body, and oppose the Design that one ought chiefly to have Regard to curing Wounds, which is Re-union. To say be added, that they are more hard, ill, and contrary to Nature, than a little Blood of which he speaks.

for what is alledg'd by him, that the *Exsudation* might otherwise be taken up by the *Humors*; it is not to be apprehended, unless it be of so great a Quantity as to ferment, and dilate the Orifices of the Vessels. This may indeed fall out in Wounds of meat; as will appear in the second Part of this Book, and in those of the *Thorax*, where the Capacity and Heat of the Part are sufficient to produce that Effect. This also happens in great Abscesses, wherof we give some Examples at the End of this Chapter. Finally, this may arrive when the Mouth of a Wound is stopp'd up with *Tentacles*, which too often keep the Matter up from one Dressing to another: It increases, ferments, and ordinarily

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acquires a vicious and malignant Quality, which may be communicated to the Heart by means of the Circulation of the Blood.

Of all those Mischiefs, *Tents* and *Dossils* may be accounted the chief Occasion. Now to avoid all these Accidents, and the staying of the Matter in the Wound, we need only leave open the Orifice, and put nothing into the Cavity which may increase the Separation of the Parts; to the end they may come together, when there is nothing to hinder their Re-union, nor any empty Space, where the Matter may make any considerable stay. These I think are good Reasons, and strong enough to overthrow an Opinion that is contrary to my ten or twelve years *Experience*.

The same M. *de la Charriere*, a little further says, that the Orifice of a Wound must be dilated when it is so little that it will not suffer *Dossils* to enter, that so it may be fill'd therewith: And I on the contrary widen it, that I may avoid the using of them, for Reasons mention'd before. Moreover it is to be fear'd, that a *Dilater* may be lost, and fixt in a deep *Wound*. Of this we have had sufficient Proof in the Person of one of our Generals, and many others wounded in the Battel of *Marsella*.

Wherefore if *Tents* may be laid aside, as has been done in this Hospital, even in deep *Wounds* of the most fleshy parts of the Body;

much

more ought they to be forbore in others. The same Author before-mention'd rejects of *Tents*, excepting in deep Wounds of cast, and lower Belly : But it may be the second Part of this Treatise, where course of Wounds in the Breast, in what we have cured many such of differentes without the Assistance of *Tents*.

or those in the lower Belly, I know it is said to me, that if I have not us'd them, it is long of the difficulty of application, and stay in this Part, where, on of the continual motion, they can't be in, unless with a very streight Bandage. The matter is otherwise ; for indeed I see what Reason *Tents* are required to this y more than to others. Let us suppose that the expected Suppuration of the con- Parts that are wounded is already be- s impossible the Matter can come away he Orifice is stopt up with a *Tent*, but fall down by its own weight into the part of that Cavity : Also what Matter id may there be collected, can't be dis- l by reason of the *Tent*, which is as a Dam it in; especially if we wait till the Sup- on of the Teguments, which is never be excited by Irritation or by *Tents*. O- se the Motion in Breathing, and the lif- , of the *Peritoneum* in Inspiration, will ut the Matter as it breeds, if a free passage v'd it.

There is one Case wherein *Dilators*, and sometimes *Tents*, become in a manner necessary ; and that is when a Wound is accompanied with a considerable Bleeding ; then they may be us'd to carry Astringents to the Aperture of the Vessels, and to support and keep them on ; chiefly in deep Wounds : For if at first we should joyn the Lips of the Wound, and apply Astringents upon them, the outward Bleeding might be deprest before that of the Vessels were restrain'd ; and so the Blood running between the Muscles would there be corrupted, and would spoil the Parts wherein it is contain'd, and those that border upon them, and might also occasion Suffocation, and a Gangrene. This is what I saw, at *Turin*, be-fal the Baron *de la Serra*, a Gentleman of *Savoy*, who being wounded with a Sword near the right Arm-pit, had a branch of the *Vena Subclava* opened : He was dress'd by a very expert Surgeon, who, whether by chance or otherwise, neglected to apply Astringents to the Aperture of the Vessel, tho' the Bleeding was very great : The Wound was joyned, and the Part loaded with Astringents, which were made fast with Compresses and Bandages. In the meantime the Blood continu'd to run from the Vein, and to diffuse it self between the Muscles of the Breast. Two or three Days past before the first Dressings were taken off, *and then the Thorax* was found to be Gangren'd.

The

wounded Person died in a little time after. The Cause of this Gangrene can't reasonably ascrib'd to any thing else but the regurgitation of the Blood and Matter, which finding an Out-let, squeez'd down, by reason of bulk, the Vessels and the Nerves, and stopp'd the Circulation of the Blood, and so of the Spirits and other Liquors, so the *Blood* became quickly corrupted, and all these Disorders. These same Actions may be occasion'd by *Mitter*, shutt'g the Cavity of Wounds by Tents stopp'd their Orifice; especially if that Matter be considerable for its Quantity, and very crowded.

When in my younger Days I frequented Hospitals, and practis'd with very able Surgeons, I have seen at the time of dressing, the needles, for the most part, expell'd from the Wounds, in spite of the Bolsters and Bandages: Nature then clearly signifying her Intent. Nevertheless they continu'd still to return, forcibly thrusting them again into the Wounds, though not without much Pain. What a strange Method is this? How is it possible for a Wound to close up, so long as a foreign Body is entertain'd within it? If a small Ball, be kept in an Issue, tho' for many Years, it will still remain open: But if you take it out but for one half Day, you find it entirely fill'd up.

A Tent does the same to a Wound & the Ball does to an Issue ; and *Fistula's* trouble so many People all their Life, are Effect of Tents, that have been inconsiderately us'd in the Cure of their Wounds. The Humours take their Course through the places, which they find open : This becomes first habitual, and then natural and necessary, and thereby the Flesh is harden'd, and comes callous. These Impurities which Nature sometimes evacuates by ways surprizing to us, being detain'd in one place, become a Bag of Matter ; and that same Nature unwilling that any thing superfluous and unprofitable should remain with her, by a singular Sagacity makes a Virtue of Necessity, and uses these Passages she finds open to herself from the Excrements and Humo-

* Baume Radical. that disturb her ; but at the same time a part of the * Radical Bals. which is the Life and Support of Parts, passes out also by the same ways.

I know not to what I can better compare those Apertures in the Body, through which Humours take their Course, than to those Trees, whether made by Nature herself, or the assisting Hand of Man, by which the Sap that nourishes both the Trunk and the other Parts passes out. The Difference only here ; that these help to increase and prese-

rees, but those to destroy and weaken
ody.

' certain it is that *Fistula's* considerably
age the Parts, and those who have
re never in an entire state of Health;
hey shorten their Days, whatever any
lledge to the contrary. But that which
es me most, is, to find the afflicted Per-
brook the Inconveniences they suffer
kind of Satisfaction, fancying, that if
e they should permit their Sores to close
en Death would undoubtedly quickly

erefore when there is nothing to hinder
ling up of a Wound, *Art* hath nothing
do, but to observe *Nature's* Proceed-
which sometimes exceeds in the breed-
' Flesh in soft parts, and sometimes in-
ting the *Callus* in hard parts. But 'tis
able, that in curing Wounds she proves
superfluous than deficient. Thus it
s, that Tents ought not to be us'd in
ds, seeing Nature so very frequently
s 'em our, because she cannot bear the
ce of what is foreign. Don't we see,
soon as she is oppress'd with any thing
l, all her Endeavours are us'd to get
it? She has a thousand Means un-
to us, and often takes such secret and
ir ways as are hidden from the most cu-
Anatomists.

That young Man, under the Care of *Fernelius*, who had swallow'd the Ear of *Grafs* that came out some Time after by a little Abscess between two of his Ribs, is a sufficient Demonstration of this Truth. *Ambrosius Pareus* also relates, that he took from the *Groin* of a Woman, a Needle that had enter'd at the Hip of the same side. In fine, the consideration of the surprizing Ways whereby extraneous Things have been cast out of the Body, obliges us to conclude, that Nature is very wise, and can't endure the least Thing that is hurtful or disquieting. A little Dust in the Eye disturbs all her Oeconomy, and no rest is to be expected till it is out. A small Crum of Bread that goes not the right way, but is by some motion, or the agitation of a little Air thrown into the Wind-pipe, does it not endanger Suffocation? What endeavours are made to cast it out? The Air breaks forth with Violence from the Lungs, the whole Body is shaken, all its Parts are in motion, the Face is enflam'd, the Eyes run with Tears, Convulsions follow, and this admirable Masterpiece of Nature is all in Trouble and Disorder, and all this is for a Thing in appearance most inconsiderable. A Stone or a little Sand in the Reins, Ureters, Bladder or *Uretbra* will scarce permit a moments rest for the violent Pain: And indeed our Life may be called an Image of Death, so long

is out, so soon as the Bleeding is stopp'd;
at the Surest way for the Surgeon, is
worth to leave off such dangerous Means
ther, because their use may irritate,
the same by touching the Vessels,
open them and renew the Bleeding,
by protracting the Cure, occasions
Injuries to the Wounded, as I have of-
ten seen.

Cicu ab Aquapendente, Part I. Book 1.
Speaking of transverse Wounds of the
Lips, advises to apply long and slender
straws wet with the White of an Egg,
each side of the Wound, and to press
them together, so that the Lips may touch
the straws, especially if we would
prevent the Deformity of a Scar. Now I know
from why the same Method mayn't be
practicable in Wounds of other Parts of

Those who are not prepossess'd, or will reflect but a little on the Common Method, 'll be convinc'd that I don't without Cause ject it. 'Tis easie enough to apprehend Cause of the perpetual Pains suffer'd by th miserable Persons whose Wounds are fi with Tents and Dossils ; for, having thrus to the Sore Lint twisted, hard and unev and apply'd thereon Plasters and Bolsters, is made fast with a Bandage that passes fe ral times about the Part. Now, tho' i may seem not to be very streight, yet is ever tight enough to presl upon the Te and cause it to touch every where upon liv and sensible Parts : For the inward Parts our Body are indeed very sensible, and un custom'd to the Touch of any extrane Thing, so that the Wounded can't move the least without great Pain ; his wound Members are utterly disabled, and by a k of Necessity he is confin'd to his Bed, a lame and impotent Paralytick, and alw in one posture, which is no less (if not mo pernicious than the Wound it self, ,espec lly in Hospitals, where the Beds not be such as are requisite for the Ease and Co fort of the Sick, cause almost universal I coriations, and oftentimes Mortifications : Gangrenes. This I have many times seen and frequently through the Fault of th

who follow the Ordinary Method of Dres-
sing.

Not that the other Parts of our Body are
destitute of Sense, any more than these I just
now spoke of ; those that are so charitable as
to visit Hospitals will attest this ; nothing is
here to be heard at the Hours of Dressing
but Cries and Howlings.

But we can't enough recommend to Sur-
geons, on this Occasion, to use their Patients
in the most gentle manner possible ; for it
must be own'd, that there are some among
'em that would think they had not acquitted
themselves as they ought, unless they made
those under their hands to roar out for
some considerable time ; which makes many
to think, that *Surgery* and *Cruelty* are insepa-
rable.

C H A P. VIII.

*The Reasons of the Author's Practise,
with the Motives that induc'd him
thereto.*

FROM what I have already said, I know I shall be accus'd as if I only writ to find fault with the *Methods* now in use. Nevertheless I am not afraid to avow, that I am inspir'd with a much Nobler Design : I take no pleasure to trample upon the Monuments of the Dead, or to carp at the Living ; 'tis Conscience alone that obliges me to maintain what I have advanc'd for the Good of the Publick. But as it will be an hard task to perswade some People of what is contrary to the Maxims they have suck'd in as it were with their Milk, it will be convenient to propose Examples of what ought to be follow'd, and to point forth what is to be shunn'd. For, in fine, 'tis here as in Religions, every one thinks his own Method the best.

Among the great number of those, who at this Day practice *Surgery*, there are very few whose *Methods* agree. Some, without departing an Hair's breadth from the Opinion

ers upon whatever is now the Frounce
eir own Brain, and treading Antiquity
r Foot, are every Day making new Sy-
of Surgery. I know not with which
I shall be rang'd : But I have done
est to accommodate what the Ancients
deliver'd, to the Opinion of the Mo-
and the Circulation of the *Blood*; imi-
; in this the *Bees* that gather from eve-
lower, what is fit for making *Honey*:
if *Experience* may have any Sway, my
ice ought to obtain, as being confirm'd

those who extol the Cures they have
, have also Reasons to support their
tice ; which because of the Progress it
made, passes even at this Day for the
and most secure, in many Places. This
is both taken so deep Root, and gain'd

it is a general Rule, That a deep Wound ought to be kept long open, in order to a perfect Cure. Yea, the Sick themselves being prepossess'd in favour of this false Opinion, believe that the Accidents which happen some Months (yea, some Years) after they have been cur'd, proceed from the too-speedy closing up of the Wound, alledging, *The Wolf was shut up in the Sheep-fold.* As for my self, I am perswaded, and am able to maintain it, that almost all such Accidents are caus'd by keeping the Wound *too long* open, whereby the Parts being much weakened, are hard to be restor'd to their first state; so that the least *Motion* or *Excess* renews the *Sore*, and brings back again the *Symptoms*.

As for *Wounds of the Head*, where the Scull is laid bare, Exfoliation infallibly ensues, if they are long kept open: If the *Cranium* is broken, the Alteration and the Accidents are yet more considerable, and cause often a Weakness, a Depravation of Sense, Giddiness, Head-ach, and other like Distempers, and sometimes a Corruption of the Membranes, and of the Brain.

It is most certain, that a *Wound* cannot be kept long open, but a great *Suppuration* shall follow; and then, in spite of all Precaution, the Matter that is every where diffus'd will glide along, and rest upon the Bone, and the most

le Parts, as Galen says, passing into
ity of the Scull by the Fracture,
pon the Membranes, from whence
got out, but by the Operation of
; and if neglected, will bring on
nptoms.

s of the *Thorax*, or *Breast*, may be
without Danger ; as will be more
de out by Experience, in some pla-
e Second Part of this Work : For
th continue to suppurate for a long
libly bring on the *Phtisick*, *Asthma*,
Irreteness of Breath, as also incurable

annot be kept in *Wounds of the lower*
use of the perpetual Motion of the
and consequently such are secure from
and InfirmitieS that follow upon

s of the *Reins*, of the *Emulgent*
l of the *Ureters*, if not speedily
ave behind 'em incurable *Fistula's*,
ning of Urine at the Wound. The
ens in those of the Bladder.

e of the *Joints*, if Tents be us'd,
is very tedious, difficult, and dan-
for very frequently there ensues
alteration of the *Tendons*, of the
ind of all the Part ; sometimes a
; or *lengthening* of the Member,

with



with loss of the Nutritious Juice, and a Weakness that endures for Life.

Wounds of the *Extremities*, ply'd with Tents, cause an entire Dissolution of the Nerves, and often the losf of the Members : And those of *Carious Bones*, as well as those of a *Fleshy Part*, besides a great deal of Time spent in vain, occasion much Pain, Vexation, and Charge.

I have seen *Wounds* of all these sorts, some of 'em I have had dress'd with Tents, where powerful Digestives were us'd to procure great Suppurations. I have met with others that were follow'd by all such Accidents : But this I have observ'd, that such as were dress'd according to my Method, were preserv'd from all these troublesome Symptoms.

Tis known to every one, that in *Wounds* made by cutting Instruments, Union is immediately to be endeavour'd. In order to this Design therefore, we ought not to fill such *Wounds* with Lint, as we have formerly said, for that this directly thwarts it. It is also very hurtful to use Digestives, because they disjoyn the Parts of the *Blood*, and corrupt it.

The Fall of the *Escar* in *Gunshot Wounds* cannot be prevented, whatever Diligence be us'd ; wherefore Suppuratives are here of no use, seeing Nature can do that Work without

eir assistance, which only weaken and
y the Temperament of the Parts to
they are applied. Large Suppurations
ore are not necessary in the cutting of
ts.

, in fine, I can't discover any Reason
it should be judg'd requisite that a
t shou'd suppurate a long time, in
to be brought to a compleat Cure:
surely before we abandon our selves
a dangerous Practice, it is necessary
o understand what *Pus* or *Matter* is,
e it comes, and what is the Necessity

may observe then, that *Matter* is no-
else but the *Blood* of ulcerated Parts,
rg'd into the *Wound* from the Ori-
of Arteries that are cut or torn; and
ningling with the Nutritious Juice,
ht to the Parts for their sustenance,
s 'em lame as it were, and useless.
the Compression of Tents or Dilators
lood be squeez'd out of the Vessels,
y fill the Capacity of the *Wound*,
as otherwise it would have held on
inary Course. We are not then to
priz'd, if the *Blood* and the *Nutritious*
are suddenly turn'd into *Matter*,
they are out of their Natural Place;
en as a small Rivulet may make a
Lake, if its Waters are kept in with

a Dam: Just so the little Pipes that are laid open in a Wound, tho' but small, being press'd, as has been said, by a Tent, which divides 'em more, and hinders their Reunion, continually pour forth such Liquors as they contain ; and the Tent serving for a Bank, a Lake is form'd in the Cavity of the Wound. We ought not therefore to wonder, if Plentiful Suppurations continue, so long as this Method is follow'd ; and it is an undoubted Error to account such Evacuations profitable. *Ermuderus*, in his Medicinal Surgery, is of opinion, that a Wound would close up of it self, if it was not hinder'd : He says, we ought to endeavour to prevent the stench and putrifying of the Natural Balsam of the wounded Part, and to use Balsamicks, according to the Principles of *Helmont*, to hinder it from degenerating into a hurtful Acid, and to preserve it from corrupting.

In fine, he finds fault with the Surgeons for using first *Suppuratives*, then *Digestives*, and after *Mundificatives*, *Sarcoticks*, and *Ghelinatives*, as they term them : That Way, adds he, is too tedious, delays the Cure, causes Inflammation of the Part ; alters the Nutritious Juice, and often turns the Wound into a horrid Ulcer.

It is apparent by this Authority, that One Remedy skilfully managed is sufficient to answer

sver all the Intentions propos'd in the Cure of Wounds ; that great Suppurations are hurtful ; and that it is for the great Advantage of the wounded, to reject the bulky Rubbish of unprofitable Drugs.

As for such Divisions in the Body, where many small Vessels are quite cut asunder, if the Lips of the Wound are brought together, they will unite of themselves, pursuant to the Opinion of many Authors, and the Testimony of Experience, provided nothing Extraneous go between.

Now touching *Gun-shot Wounds*, that are so common in the Hospitals of the Army, I am bold to affirm, that my Practice has given me more Insight into their Nature, than all the Authors that ever wrote on the Subject. Not to enter upon a Debate concerning Bullers, it is evident, that the Effect they produce in the Body does something resemble Cauterizing ; but tho' sometimes I use this Word, I can scarcely believe that they really cauterize ; but being round, solid, and compact Bodies, they cause Contusions ; they tear and bruise whatever is in their Way, and occasion a Heaviness in the wounded Part.

It is certain that the Bullet very often stops the Bleeding of the Wound, whether by the Disorder it causes in the Parts through which it passes, or by cauterizing with its touch

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touch the Arteries and Veins : But be it how it will, the Course of the Blood is stopt, and the Passage between the Arteries and Veins is interrupted; so far as the Wound and Contusion reach. The Heart, according to the Law of Circulation, squeezes the Blood it has receiv'd into the *Aorta*, from whence passing into all the other Arteries, its Course is stopt at the Wound, where it can't as formerly be receiv'd by the Veins, and finding no free passage, it extends the containing Vessels, and forcing its Way, diffuses it self according to its own Quantity, and the Space it finds : Hence proceeds the Hardness, Swelling, and Inflammation so ordinarily in *Gun-shot Wounds*. If the Blood be there corrupted, or spoilt by some *Malignant Acid*, the Symptoms become yet more troublesome and obstinate ; and after the Fall of the Escar, Abscesses, or large and grievous Suppurations, ensue.

A simple Contusion only, for like Reasons, is capable to produce the same Accidents ; which being nothing but a disordering of the Fibres and little Pipes, that changes the Regularity and Situation of the Pores, the Circulation is rendred uneasy, and the Part choak'd up. From hence comes the Dulness and Absence of the Spirits, which if not speedily recall'd, can't but be attended with grievous Consequences.

I shall

I shall speak a Word or two of the Cure of a *Contusion*, in the last Part of this Book : Here I shall only shew, that *Tents* are very destructive to *Gun-shot Wounds*, in regard they hinder the Fall of the Escar, and carrying away of whatever is bruise'd, which ordinarily is dispers'd by Suppuration. A *Tent* actually hinders the passing out of *that Matter*, and retains it in the Wound, where it causes all the Mischiefs whereof we have spoken. It may also, after the scar is remov'd, renew the Bleeding ; bruising by its rubs, and bringing to Suppuration, the young Flesh bred upon the Orifices of the wounded Vessels, while the Escar was separating.

The multitude of those who are to be seen maim'd, and with wooden Legs, and *istula's*, can witness to their Sorrow the pernicious Effects of *Tents* : Nay, how many are there, who by the Loss of their Lives saw the fatal Consequences of these means ! could they have spoken from the Grave, they would have said more than I can on this mournful Subject; and so the destructive Custom had soon been suppress'd. And after all the Pains suffer'd by these unfortunate Persons, their Complaints and Cries have not yet been able to cause a *Method* establish'd and authoriz'd by Antiquity to be laid aside :

aside : Neither has the ill Success of so many Cures in vain attempted, been hitherto capable to undeceive the Practitioners of Surgery.

However, I thought my self oblig'd to communicate to the Publick, what I knew upon this Subject ; that I might, if possible procure for afflicted Patients, a Gentle, Speedy and Easy Method, for the Comfort and Encouragement of such as so generously expose their Lives for the Glory of their Prince, and the Good of their Country.

All my Practice is levell'd at these Ends as may be seen by the Sequel. I abstain from using Tents and Dilators, as much as I can and as the Case will bear : I occasion littl or no Pain, save at the first Dressing ; and then I always widen the Wound, especially if it is a Gun-shot One, and do my best to draw out the Extraneous Bodies : Now on this occasion I have three things further to recommend, which are, to dress Gently, Speedily, and Seldom.

There is a Way of Dressing Wounds made with Iron Instruments, usual among the Soldiers, call'd the *Secret Dressing*, wherein they carefully suck the Orifice of the Wound, in order to draw out the Blood therein contain'd ; then they take *Samaritan Balsam*, or *Oyl* and *Wine* mix'd without boiling, and sometimes either of them alone, which they

squi

it into the Wound from their Mouth, and pour any other Dressings, cover, and bind it, muttering some Words between their teeth, to make the Method appear mysterious which causes many People to think it magical.

But these Words are ineffectual, and their use imaginary, serving only to palliate the Ignorance of such People, who know not what they do ; and to deceive the Imagination of the wounded. These words, tho' accounted miraculous, have nothing in them supernatural, and may be perform'd without invoking the Assistance of Angels. 'Tis known to every one, that Blood, when it is out of the Vessels, coagulates, and corrupts in the Wound, if it make Stay there, and that by sucking out the corrupted Blood, Suppuration is prevented, also that is remov'd which might hinder Re-union.

CHAP. IX.

It is necessary to Dress Wounds Gently.

Indolence is one of the Things that are indispensably requir'd in the curing of Wounds.

Wounds. This Circumstance is so necessary, that without it other things have seldom the desir'd Success ; yea, so much as I posses'd in Favour of this Opisition, that when I see some that are rigorously handled, I often admire how they ever come to be cur'd : And indeed they never are, without a great many Accidents, that fall out in the Progress of the Cure.

'Tis common for a wounded Person to be seiz'd with a *Fever*, which being symptomatick, must be a consequence of the *Pain*. The *Inflammation*, that brings along with it such a numerous Train of troublesome Accidents, is often occasion'd by an Irritation of the sensible Parts. *Want of Sleep* proceeds ordinarily from nothing else, but the *Pain* is either over all the Body, or in one Part only. Now if by *Dressing gently* these three Accidents are avoided, we may quickly hope to see a perfect Cure.

Tents, *Dilatets*, and *Setons*, as hath been already sufficiently observ'd, are the principal Cause of the *Pain* that the poor Wounded endure, and the Occasion of so many hurtful Accidents ; their remaining in Wounds being infallibly attended with most destructive Consequences. If then we lay them aside, we may prevent the *Pain*, and what follows upon it ; and so having the *Command* of whatever may give us trouble

trouble in Dressing, we may manage the Cure as we please.

Finally, we ought to endeavour with all Care to remove so soon as possible what might cause Pain, and by *Evacuations* and *Diversions* wisely to withdraw what would foment it: And if it takes Place already, we must apply what is most proper to ease and overcome it: For, in a Word, Pain is the worst *formidable Enemy* in the Progress of any Disease whatever.

C H A P. X.

That it is necessary to Dress Wounds speedily, in order to prevent the Access of the Air.

N this Chapter I endeavour to shew, that the Dressing of Wounds ought to be perform'd *speedily*, because Experience hath taught me, that the *Air* is a mighty Hindrance of their Cure: And this is one of the chief Reasons that oblig'd me to follow his Method: For tho' some Pain in Dressing is inevitable, yet by this means it lasts for so short a time, that the Wounded scarce perceive it. By this means the *Air* has *not time enough to exert its Influence upon*

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upon the Flesh destitute of its Coverings; and the nitrous Parts, with which it is thought to abound, can't pass to the Bottom of the Wound; for I am of Opinion, it is the nitrous, clammy, and as some think, arsenical Qualities or Particles of the Air that destroy the due Temperament of the Parts, when depriv'd of their natural Cover, and that consumes, or at least alters the *Natural Balsam* or Nutritious Juice, which is as the *Cement* that unites the divided Parts.

All the *Ancients* as well as the *Moderns* are agreed in this, that the *Air* is an Enemy to Wounds: And Experience attests, that even the most pure and subtil Air, is ever attended with a certain sharp and clammy Acidity, that sticks to Iron and Steel and makes them rust.

'Tis the same *Air* that occasions so many Disorders, that alters and corrupts the *Bones*, hurts the *Nerves*, and destroys the *Tendons*, corrodes the *Flesh*, and utterly marrs the Temper of the Parts, by wasting the *Spirits* that preserve the *Radical Moisture*, which with a little Help, and oftentimes almost without any, unites broken *Bones* by a *Callus*, fills up *Wounds* with *Flesh*, cleanses *Ulcers*, and brings them to a Scar.

Hippocrates, Sect. 5. Aphor. 20, says, that the *Cold* is offensive to ulcerated Parts; that

hardens the Skin, causes Pain and Hardness, occasions Lividity, Shiverings, Fevers and *Convulsions*.

By the *Cold* here is to be understood the Air, by means of which Disorders are excited in us; it is corrosive, and therefore exalates the sensible Parts; it hardens the skin, thereby hindering the Transpiration of the *Vapours*, which being retain'd, cause Pain, Hardness, and Fluxions of Humours, id these produce Shiverings and Fevers, id oftentimes are follow'd by Lividity, *convulsion*, and a Gangreen.

The Access of the *Cold Air* is indeed one of the Causes of the Pain, which is so common in Wounds remaining too long uncoz'd, because it coagulates the Humours, id causes the *Blood* in the small Vessels to come more sharp, and so to ferment and corrupt.

A little Experience is sufficient to make us agree to these Reasons: We ought to second the Designs of Nature, that are ever m'd at the preservation of what is most precious, such as the *Spirits*: Now we may be assur'd, that when a Wound is left uncoz'd, or often open'd, there is occasion'd considerable Loss of these same Spirits, hereby the Part is so weaken'd, that being unable to make the right Use of the Nourishment sent for its Maintenance, it is all

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chang'd into corrupt Matter and Excrements.

That *Cold* is hurtful to Wounds, no-body doubts : All are likewise agreed, that the Air is at all times colder than the inward Parts of our Body. Now if the Touching of the Air only, rots the Bones; if it acts with such Force and Violence on Bodies so solid as they are, it will undoubtedly be yet more destructive to the Nerves and nervous Parts, that are so tender; as also to the *Tendons*, to the Flesh, and to all Parts in general, to which it has Access.

The Air moreover produces many other Accidents in Wounds : For, as has been said, the Spirits are dissipated by the long and frequent Attacks of the Air, whereby its acid Parts being at liberty, and not entangled, easily stick to the Flesh, and other uncov-ered Parts, which they corrode and tear with their Points ; hence proceed pricking Pains, the Cause of which several are oftentimes at a loss to conjecture.

This same Acidity of the Air coagulates the Blood in the Mouths of the Arteries that open into the Wound, hinders its Course, and makes it to swell up the Vessels, and very often also to discharge it self on the Part : Hence are Tumors, Fluxions, Hard-ness, and if it ferments, large Abscesses; for Fermentation here is only the changing of Blood into Matter. Now the Blood having nei-

er the same Situation nor Motion as former, and its parts being disjoyn'd, easily putts, and ferments in a little time ; unless we believe that the Air can't congeal the Blood in the Vessels, which yet is beyond Controversie.

that the Air is very piercing, as appears in *Chilblains* and *Kibes* in the Heels, & it has the Force to congeal the Blood in the Veins and Capillary Arteries of the afflicted. Since then it has such influence over parts cloathed with the common Tegument, what will it have on such as want

In fine, if it is able to coagulate the Blood in the Vessels where it may freely passe, much more may be fear'd from the coldness in Wounds, where the Course of the Blood being in a manner interrupted, the wounded Part receives but little Aid from the natural Heat, and the Spirits ; and the Blood it self, that precious Balsam of Nature, being unmov'd, and not receiving any vigorous Supplies from the Heart, is ruptured, as was said formerly, and turn'd into Matter, insomuch that if we press the places about the Wound, we perceive a clammy Matter to come out as from many little Pipes, which oftentimes is corrupt and stinking.

Show if Nature, which is every way admirable, and always industrious in preserving,

don't in such a Case exert her utmost Efficacy, the Part must be mortified, in spight of all the Efforts of the inconsiderate Surgeon: And then if it is a Member that may be cut off, the next thing is to deliberate whether this ought, or may be done without danger. Sometimes 'tis doubted whether the wounded Person can bear up under the Rigour of so painful an Operation, considering his ill Temperament and Disposition of Body, which only are accus'd, as the Cause of all these Accidents; for the Wound of it self was inconsiderable, and might have been soon cur'd, in a Person of a stronger and better Constitution: Or otherwise the blame is laid upon some venereal Venom, Vice of the Parent, Disorder, &c. In fine, the *Patient* and his *Temperament* are always found Guilty, and fall Victims to Ignorance. I have been in many Places my self, where such things have happen'd, and where neither the Persons wounded, nor the Surgeons understand the true Cause of the supervening Accidents. It is however very requisite in this to employ all our Care, chiefly in *Hospitals* of the Army, where we seldom find all those Conveniencies that were to be wish'd, for correcting the Cold and the ill Quality of the Air, which frequently is infected, and corrupted. 'Tis in such Places where we ought to hinder it with all our Power to pass

ward Parts of our Body, or to get
such Parts as are destitute of their
gs, lest at the same time it impart
its destructive Impressions.

ay possibly be objected to me, that if
cid and nitrous Quality of the *Air*
roduce such Disorders in Wounds, we
much more to be incommoded, by the
ent and necessary Use thereof in Rec-
ion. But 'tis answer'd, that the *Wind-*
~~and~~ *Lungs* purify the Air, which is in-
anner filtrated and prepar'd by them,
so becomes Friendly to Nature, which
uses the purest Parts, driving out by
piration, together with the hot Vapours
Exhalations of the Breast, that which is
less and hurtful. But it is not so in
ounds that have no Spring. 'Tis only the
~~ngs~~ that are fitted, and appointed for re-
ving the Air; they alone perform the Of-
e of Bellows to prepare, purify, or to ex-
it, according to the necessity of our Ma-
ine.

Besides it may be said, that when the Air
ters into places that are covered and fur-
h'd with Membranes, its Acid Parts slide
on them, and take no hold; but if there
ince to be *Ulcers* in the *Lungs*, the Air
ll then cause considerable Disorders; and
Cough which afflicts such kind of Pa-
nts, proceeds undoubtedly from nothing

else, but the *Irritation* occasion'd by the *Air* in parts depriv'd of their Covering.

Moreover, it must not be denied, that the *Air* abounds with very subtil and piercin Parts, because it will pass thro' the *Scarf Skin*, the *Skin*, and other Teguments. There are many Examples which shew, that Persons have subsisted by means of the *Air* passing through the Pores of the *Skin*, when Respiration was altogether Supprest, whether by *Suffocation*, or other suchlike Accidents. Some have also been taken down from the Gallows who were thought to have been a prett while Dead, and yet with a little help have recover'd: Whence it is easy to infer, that Nature had found the means to furnish the Heart and Lungs with a sufficient quantity of *Air*, to refresh them during that Interval by the *Pores*, seeing it could not pass by the way of the Wind-pipe. A like Consequence may be drawn from those that lay in a *Lethargy*.

We may therefore reasonably infer, that if the *Air* is so subtil as to pierce and pass through Membranes so close and compact it ought much more to penetrate considerably beyond the Extent and Cavity of a *Wound*, where there is nothing to purify or subtilise it; as there is when passing through the *Pores* of the *Skin*, it supplies the place of Respiration: For since here the *Scarf-Skin* keeps

back the more gross, earthy, and
any Parts of the Air, we have reason to
that it ought not to produce any bad
s in the places to which it comes. It
o be wish'd that *Wounds* were cover'd
something at the times of dressing,
might perform the Office of the Scarf-
and exclude the acid and viscous Part
of the Air, together with the other
Effluvia with which it is fill'd : For
the *Exhalations* floating in the Air are the
al of so many Diseases, as some mo
'biloſophers affirm, why mayn't they
in very dangerous *Symptoms*, when they
old of and cleave to alive and sensible
Now, in regard these *foreign Part*
re capable of Alterations no less than
it self, we may be assur'd, that the
alities which this has contracted in
itself, by the Breath and Transpiration of
it, are also communicated to those, since
Symptoms have a Substance, and a certain

se Carbuncles, that are so frequent in
itself of the Army, are a sufficient *Proof*
it I say. They are occasion'd, as some
by the Arsenical Particles in the Air,
being taken in by Respiration, are
put out by the strength of the Natural
upon some *Emunctory*. Now, since this
is much oftener in *Hospitals* than else-

D 5 where,

where, we may infer, that the Air also is here much more replenish'd with these subtle and impure Particles, by reason of which the Wounds (ill treated) without very great Care, become sometimes *cancerous*, always *putrid*, and often *Fistulous* and *incurable*.

I have learn'd by my long frequention of Hospitals, that those Places where the Sick have remain'd for some Time, retain, long after they are gone, the ill Smell communicated by them. This I believe is owing to the impure Particles that stick to the Walls: Whence those who design afterwards to live in the Place, are oblig'd to plaister and whit'en the Walls, that they may not be hurt by the pernicious *Effluvia* proceeding from them.

Cloaths, and other Goods, brought from Places where the *Plague* is, must be cleans'd and purify'd from the *Pestilential Particles* that cleave to 'em; without which Precaution they might excite a general *Pestilence* in the Places to which they are brought. 'Tis this which inclines me to think, that the nitrous and viscous Quality of the Air resides in those Particles or *Atomes*; which if they are capable to stick to a Body so smooth and polish'd as a Wall, and that for a long time, without losing either their bad Smell, or ill Qualities, much more will they do so to a Wound uncover'd, which is always moist, and

where they may get easier hold and act
readily, because of the Tenderness and
softness of the Parts.

ie dead Flesh of any Creature, if it is
handled and expos'd to the *Air*, sud-
putrifies: And a *Fetus*, a Member, &c.
be kept in a close Vessel cover'd with
of Wine, may be preserv'd for ever;
as on the contrary, a little *Air* will
rot it, and reduce it to nothing.

at the *Air* is a *mighty Enemy* to Wounds,
truth own'd by the modern Practitioners
surgery, no less than by the Ancients;
there are few take sufficient Care to hin-
s Acces to the Wounded Parts. Know-
is in vain when not put in Practice. Ne-
cessis this is a thing so absolutely necessa-
the Cure of any Wound whatsoever,
without it nothing that a Surgeon's Art
erform is to any purpose, but all is
al and destruktive.

om what has been said, Consequences
be deduc'd very useful in Practice. All
Regard I have for *Antiquity*, was not
lent enough to keep me from declaim-
against an Abuse, tho' establish'd by Cu-
; for Truth depends on the Things them-
, and not on the Opinion the Ancients
f them. I know many have already ex-
d themselves on this Subject, much af-
e same manner as I have done. *Celsus*,
who

who ought not to be reckon'd among the Moderns, has written something that looks this Way. In his Book of *Wounds of the Scull*, Chap. 4. He says, that Flesh breeds easily enough in any part of the Head, except a little above the Space between the *Eye-brows*, where often there remains an incurable Ulcer, because in that place there is a Cavity of the Bone full of Air, bordering upon the *Os Cribrosum*, which *Air* hinders the filling up of the Ulcer.

By all this then it evidently appears, that the *Air* is a powerful *Impediment* to the Cure of *Wounds*; and that the *speedy Method* of Dressing ought to be prefer'd to that which is yet in use in many places. And to conclude, it is certain that the Pain caus'd by the use of a *Tent*, its remaining in the Wound, the length of the Time taken up in Dressing, and the frequency thereof, of which last I shall speak in the following Chapter, are the genuin *Sources* of all the Accidents that attend Wounds. Wherefore we must *dress speedily*, and according to our *Method*, if we would prevent many dangerous Inconveniences.

CHAP. XI.

That Wounds ought to be drest seldom.

GALEN, in his Fourth Book of the *Composition of Medicines*, Chap. 4, orders to dress *Ulcers* but once in Three Days. This Method he acknowledges to have come from *Asclepiades*; and I can't but wonder that such a Practice has found so few Followers, considering 'tis so necessary and advantageous for the Patient.

If *Ulcers* require not to be drest every day, as this Author thinks, fresh Wounds do yet much less call for it. Nevertheless it is the Custom, in almost all *Hospitals*, to dress regularly twice a day; and, I believe, there is scarce one to be found that does otherwise, excepting that of *Brianson*, where they dress the Wounded, some only *once* a day, and others but *once* in two, three, or four days. If I had found this Method hurtful, I would not have been so wicked as to continue using it, much less desire that Others also might do the same.

PAREUS, (Book 13, Chap. 11.) treating of *Ulcers*, seems to be much inclin'd to the Opinion of Galen, when he disapproves frequent Dressing: And yet in his Eleventh Book, Chap. the Fifth, speaking of Gunshot Wounds,

Wounds, he orders to dress them twice a Day, and often once every eight Hours.

It is surprizing, that so famous an Author as *Pareus*, who believ'd the Air extreamly prejudicial to Wounds, and addue'd many passages from the Ancients to support that Opinion, should have left behind him Rules altogether repugnant to it. But 'tis probable he was so basid in compiling so great a Work, that he had not Time enough to make the necessary Reflections upon this Subject, which requires a very diligent Application : and this may be the Reason why in many Places he contradicts himself.

Fabricius ab Aquapendente, Page 1. Book 2. Chap. 7.. discouſſing of the way to preserve the Substance of the Parts in simple Wounds, affirms again and again, that it is enough to take off the Dressings once in three or four Days ; which he confirms by the Authority of *Galen*, where he Treats of the Cure of putrid Ulcers, &c.

'Tis certain, that the feldomer a *Wound* is dress'd, the less it matters, provided it be not stuff'd with Lint or some such thing : The *Remedy* also has the more time to communicate its Virtue to the Part, which seems in some sort to be nourish'd thereby : And the Nutritious Juice has more liberty and time to restore the lost Substance, and re-unite the divided Parts. On the other hand,

, if it is often drest, the Strength of the edy being destroy'd, and its Virtue di-h'd, it becomes so weak, that it has no t, and its Moisture running away, like ap of a Tree when 'tis pierc'd, is mixed Matter, and turn'd into *Pus*.

hat *Nature* does in uniting broken Bones, instruct us what we ought to do in the g of Wounds : We see that a *Callus* is without the Assistance of any thing, by wise Contrivance of Nature oniy, if so lat she is not by frequent Dressing, or crete motions of the Part, diverted from Work,

hen the little *Fibrous Tbread*s begin to rm'd in a Wound, in order to unite the that are divided, and the Nutritious : is communicated to the Part, to restore its natural State ; if then the Part is of- disturb'd with frequent Dressing, if the ind is search'd with the Fingers, or with ebe, or a dry Tent, &c. what Nature done, will be bruis'd and separated, and Work destroy'd as soon as begun ; so that his Method is continued, the Nutritious e becomes thick, and hard, and cleaves ie Sides of the Wound, where it forms a y, and often a *Fistula*.

eneration then, which is the principal rk of *Nature*, cannot be accomplished out Rest ; so true it is that Repose is necessary

necessary to her in all her *Operations*. Hence it is that I cannot apprehend by what Reasons they are influenc'd, who by frequent and painful Dressing, without any Necessity, exasperate the Wounds ; and I protest, I could never my self endure so cruel a Method. Sometimes they search and sound them with their Fingers, sometimes with an Instrument : And, not contented with this, if they fancy they have found any thing, desire their Friends present, and their Boys, to do the same : And in this miserable condition is the wretched Patient detain'd, sometimes an hour, and that most frequently twice a day. I dare not venture to name the Places in *France*, *Italy*, and *Germany* where I have seen the Wounded us'd in this manner, and that by such as held very considerable Posts, where a good Method was extreamly necessary.

At last, after much Time has been spent in raking into the Wound, they think they are bound in Credit, for the satisfaction of the Wounded and the By-standers, to draw out something, and shew it publickly, lest they should seem to have labour'd in vain. Now if it should chance that at length any little piece of a *Corrupted Membrane* is found, (which would not be strange in a Wound dress'd after this manner, where *Corruption often causes great disorder*) it is drawn out with
abun-

abundance of Ceremony, and the Operator fails not to declare, with great Confidence, that *this* was it which occasion'd the Restlessness and Pain of the preceding Night. And now, you must think, the *Wounded Person* is half cured.

Heavens! what Abuse! Is it possible that any Man can be so much impos'd upon? I would gladly understand what it was that did separate this Shred of a Membrane, or these Fibres, &c. It will be answer'd, without doubt, that it is *Nature*, which endeavouring a *Re-union*, rejects that which opposes it. I demand again, How was it brought to this place? By the same *Nature*, will one say. And why then will She not go and drive that extraneous thing quite out of the Body, seeing She has done so much? She is able to drive out Bullets, tho' fasten'd in a *Bone*, (as I shall shew in the Second Part) to expel Splinters, yea, to bring 'em to the Orifice of the *Wound*, and that a considerable time after it has been clos'd up; why should we then apprehend that she will leave such things within, from which she may so easily free her self, either by the Orifice of the *Wound*, or by some other more convenient way? For 'tis certain that *Nature*, left to her liberty, ever takes the nearest way. Besides, all the Parts of the *Body* have an Elasticity, or Spring, whereby any Foreign Thing is

natu-

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naturally driven from the Center to the Circumference.

Antony Benevent a Physician of *Florence* relates, that a certain Woman swallow'd a very large *Needle*, which two Years after came away by her *Navel*: And *Tarentus*, a Physician also, reports, that Maid, who had swallow'd a *Needle* about four Fingers breadth in length, voided it ten Months after by the *Urinary Passage*.

From hence it appears, that the Industry and Sagacity of *Nature* surpasses that of all the *Esculapian Family*: She knows what she does, and wants not to be instructed in the ways she ought to take, in Order to drive out of the *Body* whatever oppresses her, or is *foreign* and *noxious* unto her. The *Surgeon* ought only to employ his utmost Care to understand and follow her: He must study her Designs, and take all care not to divert her from her Enterprizes, considering she does nothing in vain.

After what I have said concerning *Nature*, I would not have any to think that I am One of those that regard her as a *Deity*, and ascribe to her a *Reason*, whereby she disposes of all her wonderful Works. *Reason* I take to be a peculiar Privilege of *Human Soul*; neither am I of the *Opinion* of *Empedocles*, that whatever She does is mysterious: 'Tis he that *Aristotle*, in his *Third Book*

Book of Metaphysicks, ridicules for giving no other Reason for many things that were ask'd him, but this ; That it was Nature's Pleasure. All I say is, That if her Operations are marvellous, they are owing to her powerful Author, who has entrusted her with whatever we have that is precious.

But to return to my Subject : 'Tis fit I should advertise my Reader, that I would not have any follow my *Method of Seldom Dressing*, unless first he hath entirely laid aside the Use of Tents and Dilaters, which, by retaining the Matter, would cause a Fermentation, whereby these same Tents and Dottils would likewise be corrupted. This is what fell out *not long ago* in a Cure to which I was call'd ; the Dilaters that had been us'd were carried along with the Matter that was discharg'd between the Muscles, and there putrifying, the *Corruption* was quickly communicated to the neighbouring Parts : Whence it appears, that this *Method* is attended with peculiar and inseparable Circumstances, that must not be neglected.

M. Verduc, in his *Pathology*, Tom. I, fol. 439, advises not to do as some Surgeons, who every minute are opening the *Wounds* of those who are under their Care ; For, says he, by *too often* taking off the Dressings we hinder their re-uniting, and give Ocation to the Air to insinuate it self into the Wound,
and

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and to coagulate the Nutritious Juice. This indeed is a most just and reasonable Thought. I remember, when I was at *Rome*, in the Year 1678, I chanc'd to see a little *Book*, written in Italian by the chief Surgeon of the *Hospital of the Holy Ghost*, whose Name I have forgotten : He therein discours'd of *Wounds of the Head* only, and prov'd, by very good Reasons, that they ought to be dress'd only once in three or four Days, and sometimes not so often. Moreover, in Dressing he did not altogether lay open the *Wound*, but kept always upon it some thin Covering ; as is done at this day in many Places in dressing Burns, &c.

In fine, He took such great Care to hinder the Air from passing into and injuring the *Wounds* which he dress'd, that we may be assur'd he judg'd it a great Impediment to their Cure : Which was also his Opinion of frequent Dressing. In the same *Book* he adduc'd many Examples, among which were several Accounts of very considerable Cures accomplish'd by this Method.

It were much to be desir'd that every one, without regarding the publick Censure they might incurr, had the same Charity to reveal the *Knowledge* they have attain'd by their Care and Experience ; for 'tis very probable that by the Universality of Mankind, almost an Universality of Knowledge is possess'd ;

One

ne has a Genius for one Thing, and the
ext hath a Genius for another, and each
eir different Endowments : So that in Ci-
l Life, and particularly in an Art so neces-
ry for the preservation of Mankind, every
e ought to communicate without any Re-
rve.

After all, there is no Rule without some
xception ; and I freely own, that there are
rtain Cases wherein Tents ought some-
mes to be us'd ; as in *Wounds of the*
chest, and in an *Empyema*, when we would
nder the total Evacuation of the *Blood* or
tatter, to preserve the Strength of the Pa-
ent : or, in fine, on some other Occasions,
here they may be judg'd absolutely neces-
ry.

There are other *Wounds* to which Dilatations
e necessarily requir'd ; as when the *Bones*
ing rotten or ulcer'd, we wait for their Ex-
diation ; or when they must be kept open,
order to some further *Operation* to be per-
orm'd upon 'em.

There are also other *Wounds*, to which of
ecessity we must occasion some Pain, whe-
ier by drawing forth *Extraneous Bodies*, or
y setting *Broken Bones*, or by dilating their
rifice.

Others there are that will take up some
ime in dressing ; as those of the *Head*,
here we often suspect there may be a *Fra-*
ture

ture of the Scull ; also when the Scull is broken, when some Operation is to be perform'd upon the Bones, in complicated Fractures, and when Extraneous Bodies are to be drawn out; in such Cases we can't dress so quickly as were to be wish'd.

To conclude ; There are *some* that must be often look'd to, as when, notwithstanding our Care, the Suppuration is great ; also in Abscesses that are cavernous and deep, in very hot Seasons, and in Patients of an ill disposition of Body, who abound in Excrementitious Moisture ; or when Phlegmons, Erysipela's, Lividity, Grangrenes, or any other unexpected Accident ensue upon a Wound : For it is the Part of a prudent and skilful Surgeon to accommodate himself to emergent Occasions, and to correct the Symptoms as they fall out.

C H A P. XII.

A Discourse upon Discover'd Bones ; with the way to prevent Exfoliation.

IT is almost an Universal Custom (at least I have seen it put in Practise wherever I've been) just as a Bone is uncover'd, to widen the Wound by Tents and Dilaters, and wait its Exfoliation. This is so superstitiously observ'd in many of the King's Hospitals, that

ld be judg'd a very heinous Offence otherwise ; yea, or to neglect what been deliver'd by the Ancients ; as if ere eternally Oblig'd blindly to follow Dictates.

perience has taught me, on many Occasions that nothing is more requir'd to prevent spoiling a *Bone*, when only unco-
but to defend it from the Access of ir : For this intent we ought to endeavour the *closing* the *Wound* with all possible , by proper Bandages and balsamick Ointments, without *dilating* it by Tents and Sponges; thus the *Bone* will quickly be covered and the *Exfoliation* thereof avoided, which will infallibly ensue if Time be given ir to exert its pernicious Efficacy on it.

many Authors have enjoin'd Stitching in Case. Hippocrates, and several after him have approv'd thereof in *Wounds of the Head*; which nevertheless may be united without it, unless they are large and transverse, and of the lower Parts, where Stitching sometimes becomes necessary, by reason of the shape of the Scull.

any considerable portion of the *Bone* is made bare by losing the covering substance, the *Wound* being large, 'twill take up a long time before 'tis clos'd up : In this case all our power will not be able to hinder the alteration and softening of the *Bone*, either by the Air admitted,

mitted in the numerous Dressings, c
the *Matter* running along, or staying
the *Bone*. To prevent therefore this In
venience, we must in the first Dressing p
the *Bone* as nimbly as possible, in many
ces, with the Pyramid or Pike of the Tre
by this means a Way is open'd to a *Ma
Juice*, which thickening upon it, cover
Bone in a little time, without suffering
lose any of its substance.

It is well known to *Surgeons*, that any
siderable Portion of the Scull, laid bare
Wound, can never again be cover'd with
without the assistance of Art, because of
smoothness and glibness of its Surface : I
this Consideration it was that many of the
clients thought fit to rasp it, that it might
come rough and unequal, and likewit
make way for the Orifices of the little Ve
with which its inward Substance abounds
Supply it with *Blood* necessary to breed
Flesh, whereby it may be cover'd.

But the *Operation* which I have made
it, on many Occasions, and which I here
pose, appears to me to be more speedy,
and profitable than *Rasp*ing, wherein the
Instrument passing to and fro many time
the whole Surface of the *discover'd* I
heats it, and alters it much more than the
of the Trepan, which only slightly touch
at certain distances, and yet pierces so

only Scar.

Operation may be us'd, when the first, both Tables of the Scull are broken; no inequality to be left on the inward hereof that may occasion Accidents, ill appear in a small time: For if we procure a covering to the Bone, the til Part of the Matter may slide into ture, and there cause some Alteration, imation, (for, according to *Galen* and e Bone is liable to this Inconvenience) i yet more troublesome Accidents. ice the first Operation of this nature perform'd was of the Scull, I shall justify this Practice, by shewing how rish'd.

cull, according to the Opinion of man-
its Nourishment from three different

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external Part, it receives Nourishment from the *Pericranium*, wherewith it is every where cover'd and defended.

When therefore by some external violence the Bone is depriv'd of the *Pericranium*, and remains uncover'd ; 'tis certain that the Air by its Acid and Nitrous Points, takes hold on its outward Surface ; and in a little time alters and rots it, and then it must needs exfoliate, because it is bereft both of its Nourishment and Defence.

It becomes necessary then to make an Amends, and to draw Nourishment from the neighbouring Parts instead of that which is lost, that at the same time by covering it anew, it may shelter it from external Injuries. Now this we can have from no nearer Place than the *Diploe* ; but in order to that, we must give it an easie Passage, and open to it a Way to fulfil at once the *Intention of Nature*, and that of the *Surgeon*. This is accomplish'd by piercing the Bone, as we have said, whereby the *Diploe* sends forth at these little Holes the most subtle Part of *marrowy Juice* ; which congealing upon the Bone, in three, four or five Days, sometimes sooner, sometimes later, entirely covers it.

Other Bones that have Marrow, are nourished from within, by the Vessels of the Membrane which covers the Marrow ; and from without, by the *Periostium*, or Membrane wher-

ewith they are invested: For this Re-
-tinent perform this Operation, when there
is ~~swelling~~ on the Bones of the Shoulder, Thigh,
Leg, &c and those who doubt of this, may
be convinc'd by a Tryal.

at which ought to recommend this Me-
-dical Practice, and procure it an easie Reception, is,
thereby the Cure is accomplish'd in twelve
teen Days, or so; whereas otherwise it
take up near sixty; for about forty Days
equir'd to the Exfoliation of the Bone,
twenty more to fill up and cicatrize the
Wound. Our Way is so exceedingly advanta-
-geous to the Wounded, that it ought not to
be rejected; nor can it, without departing
from that Charity we owe our afflicted Neigh-
-bours, who by Delay in such Cases is ex-
-tremely endanger'd, especially in an Hospital,
where the corrupt and infected Air ruins in
the strongest Constitutions. I have often
seen it, and it is but too ordinary, that the Woun-
-Persons being cur'd, and just ready to go
to the Hospital, have been suddenly seiz'd
of malignant Fevers, loosenesses, Bloody Fluxes,
occasion'd by their tedious stay in such dis-
-Places, and Death often has been the first
that deliver'd them from all their Mis-
-eries. Therefore we ought to endeavour a spee-
-dier, and to spare no Pains to prevent that
dangerous Exfoliation. But if the Wounded are
to us with the Bone alter'd, or if we can't

avoid his Accident with all
mift endeavour to help on
with all Speed; for as a Gang-

Parts wants the Afflamee of A
to it, so does Rottenness, which
of the Bone; wherefore Exfoli
haften'd by external Remedie
go no further; for sometimes it
one End of the Bone to the o-

It is the Surgeon's Province to
Remedies as are proper for 't
The Ancients and Moderns ha
store of this kind; but above
avoid the use of Acid Spirits, w
the Rottenness, and have the fat
Bone, as *Amid forth* on Iron.
Cantery is a great Help on the
as also *Euphorbium* infus'd in Sp.

The Rules I have propos'd:

foliation are inconsistent with th
many Italian Surgeons, who n
the Bone, so far as it hath been to
Air, will infallibly exfoliate. I
fore had great Debates on this
some People, who through a Sti
nion, without any Ground, w
yield to Reason, nor Experience
able to bear what was contrary
Principles and Practice.

C H A P. XIII.

*Dress with a New Instrument, in
where Trepanation is us'd, and other
ders of that Nature.*

Wounds of the Head, accompany'd with a Fracture of the Scull, are such as an expert Surgeon : I am convinc'd, oppose none will deny it, that the Air is to them : In this both Ancients and Moderns are agreed.

Nevertheless, 'tis certain, that a great Part of the Wounds that follow upon them, probably from the little Care that is taken of the Acces of the Air into the Wounds, the Scull be only bared, or broken, repann'd. I have discours'd of divers in the foregoing Chapter, and now only two or three Words more to touch Wounds, where the Scull has lost all its Substance.

When the *Dura Mater* is uncover'd, I prepare of Lead very thin, and very pierc'd into Holes in several Places, to fit to the any Inequality, cut and fitted to the Edge of the Opening ; and to make it more convenient to sketch it out with the Crown of the Finger that I have us'd, or am to us'd in this Operation : Or its Measure may be taken from

the Piece of the Scull cut out by the
On each side of the Plate is left a li
somewhat longer than the thickness of t
these little Ears I bend both one wa
they may be perpendicular to the Pla
so much of them as exceeds the thi
the Scull, I bend outwards again, that
they may rest upon the Scull, and by
as by two little Handles, I may lift i
with Pincers, if need be; at each D
these two little Handles may be cut so
broader than the two pieces that joy
to the Plate, which must be of an equal l
When I use it, I dip it in some proper
cine pretty warm, and apply upon i
soft Pledgit of fine Lint.

I have found very much Good by t
thod, and have observ'd a five-fold Ad
in the Use of this *Plate*. First, the
or *Blood* contain'd within the Scull pa
at the Holes of the Plate, and is imp
the soft Lint that I put over it: And
acquit'd any mischievous Quality by
there, which often falls out; the L
which it is soak'd up, detains it from
ing the *Dura Mater*, and imparting t
tagion thereto; and consequently, t
le's hazard of its Alteration.

In the second place, this Plate, by
pressing upon the *Dura Mater*, faciliti
coating out of the Matter or Blood ext
ced under the Scull.

rdly, It hinders the breeding of a *Fungus*,
e bunching out of the *Dura Mater* be-
tween Scull, which otherwise often comes
obliging us either to cut off, or con-
tract Catharticks, that which so stands
whereupon very grievous Accidents
mee ensue.

irth Advantage is, That it hinders by
it pressure the *Dura Mater* in its conti-
nion to strike against the Inequalities
and parts of the Scull, that remain af-
ter the bone has been rais'd by the Operation
Trepan, or entirely separated by some
Violence.

finally, it protects the Brain and its
stems from the assaults of the Air, per-
petratin some sort the Part of that Piece of
Scull that was taken away.

more are us'd that there is, or are in-
tended there may be, some coagulated
matter the Scull, we may for some time
use of the Plate, that we may leave it
usage; afterwards we may use it, the
of the Accidents being over, and then
left it hinder the re-union and gene-
f the Callus.

The Operation of the Trepan is per-
formed in the Basis of the Scull, as is usual to
without scruple, the bunching out of
Dura Mater is more to be fear'd, and so
is absolutely necessary to support it,

and keep it in : But for the Operat' p'ace, as well as for that on others, endeavour, as far as the Case will be: the highest part, that the Plate may less weight to sustain. We may sa: for 14 or 15 days, if we judge it ne: it may be made of Gold, Silver, &c: ing to the desire and ability of the but for my self, I always use a le: for every-body knows this Metal i: to Nature, and is vulnerary and dr:

Tho' there were no other Advant: from the use of this Plate, but only: fends the Brain and its Membranes: Insults of the Air, this were enough: mend it to our Esteem. 'Tis certai: Air acts not with that force when its: find a hindrance, or when they must: such little holes as those of this Instru: sometimes I don't lift it up but in 2: when it purges freely, and the Accid:

M. Verduc affirms, that the *Fung*: breeds on the *Dura Mater* is caus'd: tacks of the Air. In a word, all the: and Moderns agree in this, that the A: nicious Enemy to the Membranes a:

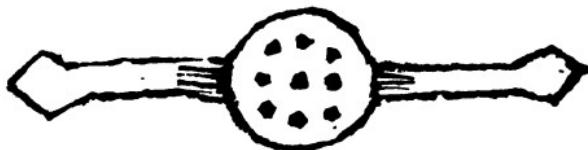
It is not then without cause that: a good and provident Mother, hath: to encompass the Brain with two M: the Scull, the *Pericranium*, the Tegu: the Hair on every side, to cover it fro:

pressions of the Air, which of all the Elements is most hurtful to it ; and the most part of those that have been trepan'd, or by a Fracture of the Scull have lost some part of its Substance, without having the *Brain* or its *Membranes* hurt, are subject to a great many very troublesome Accidents.

The reason of this may be easily conceiv'd, for (at certain Seasons, and in certain Constitutions, in which the Skin is more relaxated) the Air being endow'd with more piercing and subtil Parts, finds nothing sufficient to stop its course, and passes, notwithstanding the *Callus*, which is never so solid as a Bone, and striking upon the Membranes, which are extreamly sensible of Cold, occasions those Pains that such kind of People are subject to.

That the Description of this Plate may be the better understood, we have here subjoin'd its Figure.

The Figure of a Plate with nine Holes, to be us'd when the Crown of the Trepan is larg .



A little Plate with five Holes.



The Figure of a Plate ready for Use, with the
little Ears bent.



T

The Hospital-Surgeon.

P A R T I I.

Further evincing the Excellency of the Way here propos'd, by a faithful and particular Account of Wounds of all kinds, and in all Parts of the Body, thereby brought to a quick and happy Cure. Together with useful and practical Reflections.

C H A P. I.

The Reasons of writing this Second Part, with a general Proposal of what it contains.

THO' sound Reason, supported by Authority, may appear to be a Proof of the Goodness of any thing that's convincing enough to sustain the weight of what Consequences might thence be deduc'd, yet does there oftentimes still remain an Uneasiness and Hesitation in the Mind, no otherwise to be remov'd but by Ocular Demonstration, as 'twere, and Experience; for nothing so infallibly shews the Possibility of Things, as their having already come to pass; nor can any thing so well assure us what will follow upon 'em, as a multitude of Tryals. 'Tis this Consideration that indu'd me, in this Second Part, to give a History of some Wounds handl'd according to my

Mc-

Method, that justifie my manner of *Practice*. Had I thought it requisite, I could have fill'd a great Volume with Cures that I have don these ten or twelve Years, and which were all brought to a happy conclusion, and compleat in a very small time ; but, to avoid tediousness, I resolv'd to set down as few as possible to relate only one of each sort, and each Part had once design'd, tho' I since found myself necessitated to exhibit many ; of which tho' some at first may appear altogether alike yet if they be more narrowly scan'd, they will be found to differ from each other in some very material Circumstances.

As for the Order observ'd in these Relation I have follow'd that of the Dignity of the Parts, beginning at the Head, and ending with the Limbs, not minding the Series of Time wherein they hapned. I have describ'd a things just as they were, without either adding or diminishing, having no other design, but to make the Easiness and Expedition of this Method appear, by the Examples I here relate.

C H A P. II.

Of the Head.

Obl. I. After the War broke out in Savoy there was brought to the King's Hospital at Lucerne, where I was then Surgeon-Major

C H A P . XIII.

Drafts with a New Instrument, in
the place where Trepansion is us'd, and other
Wounds of that Nature.

Wounds of the Head, accompany'd with
a Fracture of the Scull, are such as
the most expert Surgeon I am convinc'd,
Might doubt will deny it, that the Air
refer to them : In this both Ancients and
Moderns are agreed. Nevertheless, 'tis certain, that a great Part
of Accidents that follow upon them, prov-

es only from the little Care that is taken
to consider the Access of the Air into the Wounds,
when the Scull be only bared, or broken,
so Trepann'd. I have discours'd of dis-
tinct Bones in the foregoing Chapter, and
now only two or three Words more to
say of such Wounds, where the Scull has
some of its Substance. When the *Dura Mater* is uncover'd, I pre-
fer a Plate of Lead very thin, and very
light, pierc'd into Holes in several Places,
without any Inequality, cut and fitted to the
Edges of the Opening ; and to make it more
secure, I sketch it out with the Crown of the
Scalp, that I have us'd, or aim to use in this
Operation : Or its Measure may be taken from

Flesh, which was instead of a *Membrane* to it ; and now nothing more was requir'd, but by dressing it every other day, to attend the Fall of the *Escar*. Finally, in the space of 18 days, the Wound was fill'd up, and compleatly cur'd.

Reflection. If this Wound had been manag'd after the ordinary Method, I leave it to Consideration, whether the Cure would have been so speedily accomplish'd. From that time forward I ever kept to this Method, which I have us'd on many Occasions, and never found the Wounds open'd again, or that Exfoliation, or any other evil Accident ensu'd.

This and the following Example I judg'd sufficient to establish our Way of Dressing : And indeed, seeing it has been attended with Success in such cases, we ought to remain assur'd that it will prove no less effectual in *Incision-Wounds*, and others also where the Bone is laid bare, whether by that which inflicts 'em, or by the Suppuration of the *Pericranium*. But we must observe, if the *Pericranium* is bruis'd or discolour'd, as in the preceding Case, and *Suppuration* appears unavoidable, the securest way is to tear it off, and speedily uncover the Bone, that the 'foresaid *Operation* may take place ; for by this means the *Corruption of the Bone* will be prevented, which might be occasion'd by the lodging of the corrupt Matter thereon, and then the *Operation* would be too late.

CHAP.

C H A P. III.
Of the Head.

Obs. 2. **A** Certain Soldier, nam'd *Chateau-Montagne*, of *Aligny's Company* in *Villars's Regiment*, together with a Companion of his in the same Company, was, during the Campaign in the Year 1694, brought to the Hospital establish'd for the King's Army at *Brianson*. The first had receiv'd a Cut on the middle of the Os *Sincipitis* of the left side, by which the Bone was uncover'd the bigness of a Silver Crown-piece. At the second Dressing I made eight or ten little Holes with the Piercer upon the discover'd Bone, not reaching so deep as the middle Pith or *Diploe*, that so I might try if I could accomplish my Design without piercing thro' the first Table. I apply'd upon the Bone so far as it was laid bare Lint dipt in *Spir. Vin.* dressing the rest of the *Wound* with the simple Digestives, *Emplastr. de Betonica*, and the Kerchief.

I staid two days before I drest it again, and then found my Operation had not been without Effect ; the Bone was made reddish, and the Holes made by the Piercer (to which this Effect was owing) began as it were to sprout forth ; which made me conclude, that *Nature would accomplish the Work she had already begun.*

begun. For the first eight Days he was dress'd but four times, after which the Bone was all cover'd ; and in eight or ten Days more, wherein he was dress'd but every third Day, the *Wound* was fill'd up, and a good and firm *Cicatrix* form'd. He came into the Hospital on the 25th of May, and upon the 11th of June he went out perfectly cur'd ; all that were in it being Witnesses of the Operation, and the Speediness of the Cure.

His Companion had several *Cuts* all over his Head, which he had receiv'd on the same Occasion, but especially a deep one upon the upper and middle part of the *Forehead-bone*. Finding that in none of them the *Scull* was fractur'd, I judg'd it sufficient to join together their Lips ; only in the last, during the first Days, I left two small Threads of Lint dipt in *Spirit of Wine*, with the Ends hanging a little out of the *Wound*. Four Days after, I caus'd to be remov'd whatever might hinder the re-uniting of the Lips, dressing only once in 3 Days, because no Accident appear'd.

The Suppuration in this last *Wound* was but very inconsiderable ; and no Bones came away, neither was there any Exfoliation : So that this Man was likewise cur'd, and return'd unto the Regiment with his Companion.

Reflex. Had I only recounted one *Cure* of this nature, done in a place at a great Distance

stance from *Paris*, the Truth thereof might readily enough have been call'd in Question ; but these, with many others of the like kind, having been publickly perform'd in an *Hospital*, to which every one had free Access, and as it were in view of the *World*, ought not only to remove all Scruple as to the Truth of the Matter of Fact, but also to establish the Reputation of a *Method* attended with Expedition and Security. The Excellency and Usefulness of the little *Operation* perform'd upon the uncover'd Scull may be easily made apparent to every one, being founded on *Reason* and *Experience*. But besides, M. *Jouve*, a very expert Physician belonging to this *Hospital*, was an Eye-witness of the happy Success of my late *Cures*, he having been present from the Beginning to the End.

I should but weary my Reader, and my self also, if I should go about to reckon up the number of those, who in 3 Years time have in this *Hospital* been cur'd with surprizing expedition of Wounds of the Head ; as well such upon whom the *Scull* was cut more or less, as those who had lost of its Substance.

I am not the only Person, that has conquer'd the Scruples commonly enough entertain'd about Wounds of the Head. *Ambrosius Pareus* reports, that he cur'd in a small time a certain Person, that with an edg'd Instrument had a large piece of the *Forehead-bone*, entirely

entirely separated, and hung over upon the Face by the Skin only, which yet was easily enough re-united.

In the *Scull*, as in other *Bones* of the *Body*, when a Piece is separated, whether by a *Cut* or *Fracture*, so as yet to adhere to the encompassing *Membrane*, it is sufficient artfully to restore it to its natural Place, in such a manner, that it may have the same Situation and Disposition as formerly, that so the Pores may answer, and the *Nutritious Juice* necessary to form the re-uniting *Callus*, may be freely admitted; which could not be done, without extream Difficulty, if it were placed either too high, too low, or aside; in which Cases, the natural Order and Situation of the Part being alter'd, it is impossible it can sit so close to the *Bone* from whence it was divided, but that many little Distances must intervene, that are liable to be fill'd with *Lympha*, *Blood*, or *Matter*, or all together. Now this alters the wounded Part, corrupts its *Aliment*, and brings to *Suppuration*, that *Membrane* by which only the divided Part was ty'd: So that Nature must then of Necessity throw it off as an *Extraneous Body*.

From hence we may readily conclude, that it is not at all necessary to permit *Wounds* of this kind to come to *Suppuration*, or keep 'em open in Expectation of the coming away of *Bones*, which may be avoided without danger.

This

This our Method is also confirm'd by the Authority of *Rhasis*, and *Serapion*, Authors rated by Antiquity ; who treating of *Wounds of the Head* accompany'd with a Fracture of the Scull, tells us, that it was their Custom to stitch them, even when the Fracture pass'd through both Tables. M. *Verduc* also in his first Volume, Chap. 18. *Of Wounds in the Head*, makes mention of a Fracture of one of the *Offa Sincipitis*, that reach'd from the *Frontal* to the *Lambdoidal Suture*, which was without having recourse to Operation.

The *Diploe* or middle *Pith*, plentifully supplies the Scull with *Nutritious Juice* ; from whence it is, that when the Scull is broken 'tis more easily united, than any of the other *Bones*, indeed its *Callus* is less firm : And providing the *Brain* with its Membranes are safe, need not fear any Danger from the Fractures of surrounding *Bone* : But tho' this indemnity of the Brain and its Membranes may sometimes fall out ; yet is it scarce to be expected, that the violence that occasions a Fracture of the Scull, should by the sudden Jolt or Conussion produce some Disorder in such a soft Vulnerous Body as is the Brain. Great Care therefore and Attention is here required : For a *Rupture* or *Dilatation* of their Vessels and Anastomoses of the Vessels that are frequent enough in such Cases, and cause a *Conflux of Blood*, does not appear at first ; as I have

I have oftentimes observ'd ; but so soon as the Accidents begin to shew themselves, Operation must not be neglected.

It will possibly be objected to what I have said concerning carefully placing the broken piece of *Bone* in the same Situation it had formerly, that the Bones of other Parts of the *Body* may be re-united by Means of a *Callus*, even when so ill plac'd that there is a necessity of breaking them anew, in order to restore them to their natural Figure. But the Answer is easy ; for there is a Difference between the Case we here treat of, wherein a Piece or Splinter of a *Bone* is separated from the whole, and that now alledg'd, where the Nutritious Juice that comes from the one as well as the other Part, meets, diffuses it self, coagulates about the Fracture, and so forms that which we term a *Callus* : For in our Case, the Alimentary Liquor proceeds, and is communicated from one of the Parts only ; and if it find no Pores rightly dispos'd to receive it, there being nothing to which it can join it self, it is alter'd and corrupted ; and the loosen'd Piece shares with it in the same Fate.

As for the Operation of *Trepanning*, which I have often perform'd, considering that nothing extraordinary hath therein occurr'd, I will pass it over in Silence.

C H A P. IV.

Of the Head.

Obs. 3. About the Conclusion of the Year 1689, a little before the War of Savoy, the *Vaudois* cut off almost all the Inhabitants of *Pramol*, which depends on the Valley of St. Martin. I was at that time Surgeon-Major to the Hospital of the Army of his Royal Highness the Duke of Savoy: Thither were brought a great number of Men, Women, Maids and Children, in a most deplorable Condition; and among others, a young Girl about 9 or 10 Years of Age, who, besides others in the Body and Arms, had receiv'd 18 or 19 blows on the Head with a Cutlass, each whereof had pierc'd the *Scull*, some even to the *Dura Mater*; some Pieces of the *first Table* were carried away, and some of both *Tables* entirely separated.

I caus'd, in the first place, such Parts to be shav'd as would bear it, and afterwards I gently rub'd the whole Head with a Liniment made of *Unguentum de Betonica*, the Yolk of an Egg, and Spirit of Wine, mix'd together: In this mixture I likewise dipt large Pledgets, with which I cover'd all the Head, without either Tents or Dilatets; above these I put *Emplastrum de Betonica*, and over all the ordinary Cap. What

What her Age and Strength would a
was done for diverting the Humors; so
first Dressings were left untonch'd for 2 D
which Method was continu'd for 15 D
When we took off the Plaister, almost at
ry dressing, we found pieces of Bones stic
to the Pledgits: What was altogether se
ted, came away with Ease: And in fine,
Bones as yet adher'd to the *Pericranium*
re-united, and what was wanting in the
nium was speedily supply'd. When I perc
the Suppuration to diminish, I dress'd
once in 3 Days. This Course I found su
cessful, that in the space of about five W
the Cure was perfectly accomplish'd.
poor wounded Girl was known to almos
Pignerol, being very remarkable by the
of one of her Ears, which she had suffe
on this afflicting Occasion.

Reflect. This Cure is altogether to be a
bed to *Nature*, as being entirely her Work;
had not great Circumspection been us'd
prohibiting the access of the Air in this
where the very Membranes of the Brain i
veral places were discover'd, it could not
had so speedy, easie, and successful an Up
especially had it been manag'd in the ordi
way: For besides, that the Cure would
been unsufferably tedious, a thousand da
rous Accidents might have hapned, espec

Hospital, where long-winded Cures are attended with Success. In fine, notwithstanding the Novelty that may be charg'd this Method; it is supported by the Authority of *Hippocrates*, who, *Lib. 5. Aphor. 17.*, is, That the Air is an Enemy to the Brain, bones, the Nerves, and to our Nature in general. *Galen*, in his Book *de Usu Partium*, says, That the Air is prejudicial to Ulcers by which Word he means all Sores, and that in trepanning we ought to take special care not to cool the Brain, as well during Operation as when it is over.

The Access of the Air is not only hurtful to Wounds of the Scull and Brain, but also of the other parts of the Body : And in these the Accidents are neither so sudden nor so violent, yet they ought to be regarded with all necessary Care ; for if you ever neglect the conservation of the Natural and Spirits, the wounded Member needs fail, and frequently the Patient himself shares in the same Destiny.

C H A P. V.

Of the Face.

IN the Year 1689, I being in the same Post, and at the Place before ~~join'd, when the Vaudous were driven from~~ the

the Valleys of *Lucerne*, a certain Officer, whose Name civility obliges me to conceal, was wounded with a broken Sword in the left Cheek, towards the corner of the nether Jaw, about an inch below the Ear, and the *Ductus Salivales* were torn. He was at first dress'd by a Surgeon, who (according to his usual manner) dilated the Wound, by thrusting into it as much Lint as it could contain. A considerable time pass'd without any appearance of a Cure, and by little and little it became fistulous. I was call'd by the wounded Person to give him my Advice and Assistance; and forthwith I consum'd the Callosity, by touching it lightly with Tents dipt in dissolv'd Causticks. I caus'd him to be fed with Jelly-brath, to be taken with a Quill, that there might be no occasion to move the lower Jaw, ordering him also to keep himself very quiet, without either speaking or moving; and when all the Callosity was taken off, I applied to the Wound the Balsam of *Peru*, and presing together the Lips with long slender Bolsters, I cover'd it with the Styptic Plaister of *Crollius*. Thus he was cur'd, not without difficulty, tho' at first it might have been done with great ease.

C H A P. VI.

Of the Face.

S. BEING in *Pignerol* in the Year 1691, the Chevalier *Vauban*, a Captain in Regiment of *Beaujolois*, sent for me to see brother, who was run with a Sword into Cheek. The Wound had been dress'd by Surgeon, who at first thrust into it a Tent thick and long, which pass'd into his iith; and continuing the same Method for seven Days, the Patient was thereby w'n into a violent Fever, and his Head and : were exceedingly swell'd, by reason of great flux of Humors.

fter we had laid aside the Tent, we found necessary to have recourse to such means as ht divert the Humors; but the Accidents ch so great an irritation of the Parts had sion'd could not easily be remov'd; ne- heless they were at length conquer'd, tho' without difficulty, and by means of Sarks we compleated the Cure; but an ugly remain'd behind, occasion'd by the in- derate use of the Tent.

flet. The Face being the Image of God, as it were an Abridgment of all the Beau- of Nature, which as a little World repre-

F senting

senting in Miniature what is more voluminously display'd in the great bulk of the vast extended Universe, ought doubtless to en-
some Privilege over the other Parts of the I-
dy ; hence it is that all the Authors, both :
cient and modern, tho' for the most part th
have allow'd the use of Tents in all our
Wounds, yet they've unanimously condemn
it in those of this Part, which nevertheless ha
been cur'd with wonderful facility, and by t
use of the very weakest Sarcoticks.

Fabricius ab Aquapendente, in Wounds
the Face recommends the use of the dry Stic-
to avoid the deformity of a Scar: And indee
seeing we are to preserve the Beauty of tl
Countenance as much as possible, they are
be accounted very unskilful Surgeons, ar-
but ill instructed in what belongs to their Bi-
fines, who employ Tents on such Occasions
The *Saliva* seems to be that Balsam which
peculiar to the Face, assign'd thereto by N:
ture, which has also granted to all the othe
Parts one proper to them.

C H A P. VII.

Of the Tongue.

Obs. 6. **I**N the Year 1689, a Lieutenant o
the Militia of *Mondeville*, having hi
Month open, as he gave orders to his Soldiers

In all his Care he was not able to stay
of Blood, which was considerable,
d my Advice in this Affair.

Ig search'd his Mouth in order to dis-
om whence the Blood came, I found
t lodg'd under one of the corners of
r Jaw-bone, having only fretted the
hat part ; and finding no other Place
ence the Blood could come, but from
s under the *Tongue*, call'd *Raninae*, I.
to heat red-hot 3 of those small cau-
rons that are us'd for the Teeth, and
them to the *Raninae* ; which being
gly done, the Bleeding was stopt, and
aded Person speedily cur'd.

. The *Ancients* order'd to stitch the
of the *Tongue*, unless the pieces be

excellently accomplish the Uniting of the divided Parts without it. Every body knows that the *Tongue* is seated in the *Mouth* under the arched *Palate*, and made up of innumerable little nipple-like Bodies, encompass'd on all sides by the *Teeth*, and supported in such a manner that its parts are kept together, and cannot fall asunder. The Spittle is its *Balsam* and oftentimes the only Remedy necessary to cure its *Wounds*. This is what I have observ'd in the preceeding *Cure*; for this Gentleman's *Tongue* was, after some small time, altogether so well, that scarce any Signs of the Division of its Substance could be discern'd; but whereas it had been torn by the *Bullet*, and scorch'd with the *Cautery*, it must of necessity have lost of its Substance; nevertheless *Nature* found the way to make up what was wanting, and to effect a compleat Union of the divided Parts: From whence I have Reason to conclude, that what the Ancients have left us in Writing is not always true.

I have dress'd a great many Fractures of the lower Jaw-bone, but chiefly two Soldiers, who were wounded in that part, at the Battle of *Marsaille*. One of whom had more than half of the Bone broken to pieces; notwithstanding which, both had been, and are at this time amongst the Invalids, being disabl'd and much deform'd. Of these I will not speak more particularly, having observ'd nothing extraordinary in their Case.

CHAP

CHAP. VIII.

Of the Neck.

Obs. 7. IT would be both tedious, and unprofitable, here to relate Examples of *Wounds* in the Neck, of which I have cur'd a great number in very little time, and that with *Simple Remedies* only. I have likewise taken out *Bullets* several times, which had been lodg'd there for some time, yea, many Years. But I shall here content my self in giving my Thoughts of what I judge necessary to the speedy Cure of the Wounds of this part.

Reflect. All the *Ancients* agree in this, that *Wounds* of the Neck, tho' passing quite thro', are easily enough cur'd, provided the great Vessels and Spinal Marrow be not hurt: But they give no sufficient *Reason* for their *Opinions*. I know not, if I have hit the Matter aright, but in my Opinion the facility of the Cure proceed's from this, that the use of *Tents* has been laid aside, which in the Wounds of this Part cannot be employ'd, because of the necessary Uses of the *Wind-pipe* and *Gutter*, that would be hindred by so hard a Bandage as is requir'd to keep in a *Tent*.

It is therefore, according to my Opinion, *Nature* her self, who being freed from Impe-

diments, speedily heals up the Wounds of the Neck : and this gives a great Confirmation of the Reasonableness of my *Method*; for who fear, lest the Omission of *Tents* will bring on Abscesses, Bags, and Sinuses, have more reason to apprehend such Accidents in *Wounds* of this, than in those of any other.

'Tis well known, that this part is obscure not only to the *Bronchocele*, Afflux of Humors, and Quinsie, but also to *Pblegi*, St. Anthony's Fire, and all other Indispositions in general that afflict the whole Body : this Part, by reason of the Glands that are very numerous, is always charg'd with abundance of Humors, which render it subject to all such Disorders as proceed from the humors thrown out upon the parts.

It must also be own'd, that there is not Part in all the Body which, in proportion to its bigness, contains near so great a number of *Blood-Vessels* as are here to be found.

And in fine, if it were true that the use of *Tents* would prevent Fluxions, Collection of Matter, Bags, and Sinuses, I know no other place of the Body, that when wounded, will be in more need of them than the Neck, which is extremely subject to such Accidents.

Wherefore, since *Wounds* of the Neck, which of all the Parts is most liable to dangerous Symptoms, may not only be cur'd without *Tents*, but even much more safely and si-

in with 'em, we may conclude, that
ounds of other Parts ought to be trea-
with the same Gentleness, and set at
from the Tyranny of Tents.

CHAP. IX.

Of the Breast.

Being at Pignerol in the Month of
April, 1692. M. de Fontaniere, Comt
of the King's Batalion, receiv'd a
with a Sword, about 2 Inches above
le of the right Breast, glancing toward's
pit, which enter'd the Body between
d and fourth Rib.

was dress'd by one of the Surgeons in
, before which he had lost; according
ture, about between 7 and 8 Pounds
d ; and notwithstanding the Dres-
ie Flux of Blood did still continue ;
ch Reason I was sent for by the woun-
son and his Friends. I search'd the
in presence of him that had formerly
t, and took out of it between 8 and 9
of Blood : And left at first I should
ridiculous, I permitted it to be dres'd
Tent, and immediately after caus'd
e let Blood, and advis'd his Friends
e him to set his Affairs in Order. All
s were dangerous ; his Pu/se was weak

and *convulsive*, he had frequent Swooning Pains all over his Body. A Clyster was him, and some weak Cordials in good A little after the Bleeding, he was seiz'd a Fever: And all these Accidents conci made us question whether he could , that Night; which yet he did with gre all over the Breast, and perpetual restle

In the Morning, which ended the fir of his *Wound*, we took off the Dressings found that it had bled all Night; and between 6 and 7 Ounces of Blood ha rupted out of the Wound, which w drest, as the day before. The *Clyster* peated: We gave him *Aperatives* and *V*ries in Syrup of Violets: And in his I Diaphoretick made up of some Grains *Viol calcin'd*, and the Powder of a *Huma* which gave no small Relief, being a S in such sort of Wounds.

After the Dressing, the Blood yet ru the Wound into the Bed; and as w preparing to bleed him again, nev brought him, that he behov'd to cha Lodgings, and to remove for his gre curity, to some Place at a considera stance from that where he was. On casion, his Removal threatned no le Death; for this was but the beginning Second Day of the *Wound*. I was wi see it before his Departure, tho' it ha

but a little time before : But having
d, at the last Dressing, that some *Blood*
n one of the Arteries that pass along
er part of each Rib, and having only
omplaisance continued the *Tent*, I de-
hen to use one of another sort, there
ow no time to lose.

rdingly I prepar'd a soft *Tent*, indiffe-
hick, and blunt at the end, that it
elt upon the Rib, without touching
r, or passing into the Cavity of the

This being dipt in a simple Digestive,
l'd in Vitioil finely pulveriz'd, I ap-
ith a broad head, as is usual, together
e rest of the Dressings, and the Plai-
Andreas à Cruce. After having taken
ath, he was put into a Chair and car-
his new Lodgings, where he might re-
ore conveniently : And by the way
lost a little Blood, tho' many were of
, he could never have come alive to
l of it.

ested a little that Night ; and in the
g, which ended the second Day, the
was still pretty violent ; the *Wound*
thout Moisture or Blood ; the *Pleura*
-united : He felt a Heaviness, and
l with some difficulty. The Wound
ft now with a small Dilater only, to
for more security, a long Thread was
plying the other Things as before. I

bled him in the Arm; and encreasing
Dose of the Diureticks with the Syri
Maiden-hair, order'd an *Emulsion* to be
at Night with 2 Grains of *Laudanum*.

All these things succeeded so well, the
next Day, which was the end of the
since he was wounded, I found the Fever
minish'd: He breath'd more freely; fe-
tle or no heaviness; and in the Night
had voided such abundance of Urine, that
might reasonably enough suppose this to
been a *critical Evacuation*; he had also
store of bloody Matter. The Wound is
now in a very good condition, from this
forward I dress'd it with a Plaister only.

At Night I observ'd a Moisture upon it
which made me believe, that Nature would
accomplish the rest of her work by herself.
Wherefore, that I might not let slip so fa-
table an Occasion, and to assist Nature, I ca-
to be prepar'd for him a Potion with the di-
Water of *Carduus benedictus*, and of Scal-
four Grains of *Diaphoretick Antimony*, h
Dram of the *Confection of Hyacinth* and o
kermes, a little of the Powder of *Hyacinth*,
2 or 3 drops of the Spirit of *Sal-armeniac*.
Remedy being given so seasonably, pro-
duced a thorough Sweat; and in the Morning, w
ended the fourth Day of the Wound, the F
was gone, the weight upon the *Diaphr*
remov'd, and he breath'd without diffi-
And finally, all these Symptoms vanishing

I only dress'd with a Sarcotick Plaie had been a simple Excoriation. After which was the fifth of his mounted his Horse without help; Diblon, a more pure and temperate & so longer kept his Bed, and found it Inconvenience thereby. There I twice, which was done not out of necessity, but as an expedient I advis'd him also for a time to bat moderately. Thus the Wound ar'd to us first Mortal, and was at a numerous Train of dangerous was in five Days time compleatly e Amazement of all Pignorol.

This Method of Practice will appear to be ridiculous and rash, to those not consider'd so much as I have surprizing Works of Nature, nor Passages she finds out to discharge what is troublesome to her in like how in particular she oftentimes iss by the way of Urine.

g Experience has frequently taught Empyema in the Breast has been by means of Diureticks, the Ancients thought, passing to the vessels through the Vena Azygos, more probably through Ways to us wn, why may not a little extra-vasated

vasated Blood contain'd in the Cavity of the Breast, or lying upon the *Diaphragm*, be discharg'd by the same Ways, or by those of *Sweat*, especially if Nature be therein afflited by the use of *Diaphoreticks*?

By these Ways then, now mention'd, the Breast may be sufficiently freed from Humors that Oppress it; especially in a young and vigorous Body: neither is there now a day Place for any to doubt of this, since so many People in our Days have been Eye-witnesses of it, who can yet testify the same.

There is therefore no Reason to be so obstinately bent for using *Tents* in *Wounds* of the Breast, unless it be to carry *Astringents* to some place, that otherwise they could no reach; or to support and keep them on: But in all other Cases they ought entirely to be laid aside. For by exasperating such parts as they touch, they are apt to renew the *Flux of Blood*: they hinder the closing up of the *Wound*; and by widening the *Division* of the *Pleura*, occasion *Inflammation* upon it.

In like manner when a *Tent* is something long, it frequently falls out, that it touches the Lungs, and bruises 'em by reason of their continual motion and beating against its Points yea, oftentimes it enters into, and divides their Substance, making its way thro' the investing Membrane, now brought to Suppuration. In Wounds also where the *Lung* are not spoil'd, there

spiration, and permits not the Patient
to cough, spit, or breath freely : It
is the Circulation of the Blood, by bear-
pon the Vessels ; so that the wounded
is in danger of Suffocation, by the
tion of *Blood, Matter, or Phlegm*, and
imes of all three together, unless they
y some means discharg'd : Nay, even
there is not a sufficient quantity of one
of these, to produce such an Effect ; and
the *Lungs* are yet at liberty to perform
wonted motions, these Humors will
ferment, and corrupt, and occasion
faction in the parts that contain 'em.
it after all, this Accident may sometimes
an happy Event ; and a bad Cause may
hance produce a good Effect. For our
as we are inform'd by *Anatomy*. being



part they may open and dilate the Pores of the Veins; and by this means, the Humors being taken into and mix'd with the Blood, rarify, subtilise, and dispose it to throw off the Offending Matter, either by Sweat, Urine, or other Crises of the like Nature, according to the Disposition of the Body.

And surely we need make no great difficulty to believe, that such a thing might happen in a Wound of the Breast, if we will consider what befel M. de la Place, a Captain in the Regiment of Barrou, who voided by Stool the Matter of a great Abscess in his Arm, occasion'd by a Wound he had receiv'd in that Part; of which we will give you a particular Account in the last Chapter of this Book; as also of another wounded in the last Campaign, from whom the Matter, that was contain'd within the Breast, was drawn away by opening the *Vena Mediana*, designing only to bleed.

In fine, we may say, tho' the ways by which these *Crisis* were effected are not altogether known to us, yet it is very certain that there are such: And since *Nature* is not ignorant of them, we ought to leave to her conduct the Success of a Work, whereof she ought to have all the Honour, and which she alone brings to pass; our part being only to wait upon her, and assist her in her Design.

Galen in his 5th Book *de Locis*, has observ'd, that Matter contain'd in the Breast is often-times

s carried off by Urine ; the same he like-affirms in his 6th Book, *de partium Morbis.* *Andreas à Cruse*, a famous Physician of Vienna, in the first Section of his 4th Book of Surgery, in express terms forbids the use of Knives and Pipes in the Wounds of the Breast ; advises only to use a Plaster, the Advantages of which I have thorowly experienc'd.

ibricius ab Aquapendente, Part I. Book 2.

¶ 42. says, That he has often seen the humor contain'd in the Breast in a Pleurisie, *eripneumonia*, discharg'd by Urine. He relates an Authentick History of a Wound, being into the Cavity of the Breast, which had been dress'd as a simple Wound of the common Teguments, the Patient was soon surpriz'd with such Symptoms, as easily discover'd the Nature of the Wound. So that he might be reliev'd with as much ease as possible, and not put to the Torment of a further-opening, it was thought expedient to open the Wound ; but it was so well clos'd that the Operation of the Empyema was left off next Day. But during the Night,

Nature had accomplish'd her Work, as full of Blood being voided by the Urinary Passages, whereby the Spitting of Blood, difficulty of Breathing, and all the other Accidents were compleatly remov'd.

The same Author recommends on such occasions the use of strong Diureticks, unless a Fever

Fever hinder it. And in the above-cited Chapter he says, there are some who will not allow *Wounds of the Breast* to be kept open, but suffer 'em to close, lest otherwise the natural Heat might be dispers'd, and the cold Air should enter in, and spoil the neighbouring Parts. He adds, that the use of *Tents* occasions *Fistula's*.

Ambrofius Pareus, Book 10, Chap. 32, approves the Practice of those who make use of *Tents* in *Wounds of the Breast*; and elsewhere commends such as employ 'em not: So that, as to this point, he seems to have been undetermin'd, and inconsistent with himself.

In the same Chapter he also speaks of a Cure done by himself without *Tents*, and afterwards affirms, that the *Fistula's* which follow upon *Wounds of the Breast* are oftentimes occasion'd only by the use of *Tents*. The same Author, in the 51st Chapter of the 17th Book of his *Treatise of purulent Matter and Blood that may be carried off by the Veins*, demonstrates by many Reasons, that such an Evacuation may be; and shews, that *Galen* was of the same mind.

Hollerius, in his Commentaries, is of the same Opinion; and *M. Verduc*, Tom. 2, c. 28, affirms, that *Wounds of the Breast*, the more they are expos'd to the Air, are so much the more dangerous.

It would be a very tedious Task to recount all the Authors that have approv'd of this Me-
thod,

thod, altho' it is but little put in practice : And it would be a very easie matter to bring many Examples of Cures wrought by Nature thro' secret and occult Passages conveying Humors and Matter into other Parts than what were at first affected.

C H A P. X.
Of the Breast.

Obs. 9. **A**bout the end of the Year 1693, was brought to the King's Hospital at Briançon a Grenadier of the Regiment of Tou-raine, together with a Servant of M. de Less-e-raine, formerly Commissary at Pignerol.

The first was run into the side-part of the Breast, between the third and fourth Ribs, with a Sword, which past into the Capacity of the Thorax, and pierc'd the Lungs. The usual Symptoms appear'd at first, and *Diversion* was made. The first and second day some *Blood* came from the *Wound*, which was dress'd only with the Plaister of *Andreas à Cruce*, without either *Tent* or *Dilater*; *Diureticks* and *Diaphoreticks* also were us'd, and upon the fourth day he voided abundance of Urine, by which critical Evacuation he was freed from the *Fever*, *Difficulty of Breathing*, *Weight upon the Midriff*, and *Spitting of Blood*; and on the fourteenth day he was compleatly cur'd.

The

The other had receiv'd just such another Wound, piercing in like manner, only higher by one Rib. The *Symptoms* were so violent, that tho' it was immediately dress'd, yet was there no hope of Cure. He was treated after the same manner with the former, but was much more easily cur'd, by means of an universal Sweat, whereby that very day all the Accidents were removed. In eight days time he went out from the Hospital entirely cur'd.

Were I to give a particular account of the numerous Cures of the like nature that have been done according to this Method, there would be enough to fill a large Volume, all which were neither attended with any evil Accidents during the time of the Cure, nor follow'd by any after it; nor did they ever leave *Fistula's* behind 'em. I shall speak of *Gangrene* Wounds in the following Chapter.

CHAP. XI.

Of the Breast.

Obs. 10. IN the Year 1692, was brought to theforesaid Hospital of Briançon a Prisoner of the Army of Savoy, who was wounded with a Bullet, which entred near the right Breast towards the Armpit, and pass'd out of the Body four Fingers-breadth from the sixth Vertebra of the Back, having in his way broke asunder the 4th Rib. I

larg'd both the Orifices, but mostly that Back, which was somewhat lower than her. We dress'd him only once a day at without either Tents or Dilaters, and the hinder Orifice came forth a certain Vatry Humor, which Evacuation continued till the falling of the Escar, after which s dress'd only once in two days. I kept the mention'd Orifice open from time to by means of a prepar'd Sponge, conjecture here were some Splinters of Bone to be reg'd; which accordingly came to pass, at any pain, about the 18th day of the d: From that time I endeavour'd to up, applying between the Orifices Com-dipt in warm Wine. During this Cure, I observe no sensible Crisis, nor did any ent happen. It was finish'd in 30 days.

et. In this Wound the Lungs were ch'd, for any thing that appear'd, a Rib being broken, and the *Pleura* hurt, which had been sufficient to produce fatal ent, had any other Method been fol-; for if in this case Tents had been us'd, the Wound been cram'd full of Dossils, been often done on such occasions, the proceeding from the dissolution of the and Contusion being pent up between o Orifices, and still encreasing, and no vent, would infallibly have broken into

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into the Cavity of the Breast, from w^t could not have been drawn forth, but Operation of the *Empyema*.

An Accident like unto this hapned t^o a famous Officer of our Army in Sar having receiv'd a Wound that was th^e penetrate, and really did so, was dress^d Tents; but the *Matter* finding the which it should have been discharg'd f^r Body, intercepted; and passing among keen pieces of fractur'd Rib, diffus'd it the Capacity of the *Thorax*; and in thi^t tion he died, having his Breast full of I

C H A P. XII.
Of the Breast.

Obs. 11. **U**pon the 22d Day of Jun^t the Marquis de Larray, nant General, took by Storm a Po Valley of Barcelonetta, and on this had 25 or 30 Men wounded, who w^t to our Hospital of Briançon: Among there was one call'd Simon Cotaut, off^t ment of Vendome, and Company o^r This Man had receiv'd a Buller, whi^t in hard by the fifth *Vertebra* of th^e breaking in its passage the transvers^e on the right side, and came out on the

Thorax, between the second and third Rib, towards the left side.

This Wound was attended with all the dangerous Symptoms that use to appear: the Lungs are wounded, and was indeed the most considerable that had been Cure in the Hospital.

There was not here any need of dilating the Chest, the largeness of the size of the Bullet had done it to some purpose. The Wounds were left without any Tent, only with large dressings and a good agglutinative Plaister, the dressings and Bandage being such as usual: Suturing was made without delay, and a good Diet appointed. He was dress'd but once a day, and that with all possible speed.

The hinder Orifice of the Wound did blow with such force, that all the By-standers wereaz'd thereat, and such a prodigious quantity of *Lympha* did issue from it, that often it was necessary to change the Linnens three or four times a day. Diuretick and Vulnerary Powders were given.

This large Evacuation continued for about 14 days, after which the wounded Person was dress'd but once in two days. The first day the Aperture of the *Pleura* on the right side was perfectly clos'd up, the other having closed some days before. There was no air came away as we could observe, either from the broken Process or the Ribs that had

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had been touch'd in the passage of the Bullet, and in 35 days, or thereabouts, the Orifices were both entirely fill'd up.

Reflect. This wounded Man was sent to the Hospital as one of whom all Hopes had been laid aside ; for the Surgeon-Major of the Regiment, who at first dress'd him with great care, told his Captain, his Death was unavoidable.

This same Captain, about a Month after, coming to Briançon with the Lieutenant-Colonel of his Regiment, who had been wounded with a Sword, was much surpriz'd when he was visited at his Lodgings by this Soldier, who was at that time as vigorous as before he receiv'd his Wounds, on which he had then only a Plaster. The Surgeon also testified to me his Amazement, enquiring in what manner I proceeded to perform that Cure in so small a time.

This Cure is of it self sufficient to evince, that in Wounds of the Breast there is no need of *Tents* ; and moreover, does demonstrate, that the Operation of the *Empyema* is attended with much better Success, when perform'd on the hinder, than on the lateral Parts of the *Thorax* ; for this Operation is done with design to give passage to the *extravasated Blood*, and to evacuate the *Matter* contain'd in the Cavity of the Breast, for which Purposes this place is much more convenient than the others, the *Humors* being thereby discharg'd as soon as bred,

Key be retain'd by *Tents*. By this Patients are not troubled with Tensions, but enjoy a profound Quiet, & liberty to perform the necessary Nature acts without Constraint, her ways open, by which she may herself from what is contrary and tender; so that nothing is then to be done in closing up the Wound whether self dispos'd so to do.

Wounds of this nature, notwithstanding a vock a Bullet makes in the place it passes, are so easily and speedily closed by this Method, we have all the world to believe, that Wounds & Instruments, where there is or will be a simple Solution of Continuity, with much greater facility.

It observe, that in this Way of care is to be had of covering with good substantial Pledgits, &c, that there may be no danger of a Bullet being push'd into the cavity of the Wound : the weight of the incumbent Air : Pledgits we must apply a strong adhesive Plaster, such as that of *Anas*, which must likewise be sustain'd by four double, and all kept on the Scapular and Scapulary ; all which is necessary to withstand the entry of a Bullet otherwise, the use of Tents

be-

being laid aside, might pass into the Thor and there produce fatal Accidents.

M. Verauc, to. 1, ch. 14, advises not to *Tense* in *Wounds of the Breast* for too long ti lest thereby incurable *Fistula's* be occasion

CHAP. XIII.

Of the Breast.

Obs. 12. When I was at *Lucerne*, there brought to the Hospital, in Year 1688, a Soldier of the Regiment of *luce*, who was wounded with a *Stiletto* (w^{ch} is a Weapon made in form of a Poinard, the side of the *Cantilage Ensiformis*, the Wo as was evident to be seen when 'twas dilat^{ed} passing upwards by the short Ribs, and incing the *Midriff* in its fleshy part.

He was dress'd with a Pledgit only, cov with an Incarnative which was pretty liq^{ue}. The necessary Diversions were perform'd, such a Diet was order'd as suited best with greatness of the Wound, and the Strength Constitution of the Patient. He was dress'd only once in two days. The Suppuration but very small, and in the space of 8 Days he was compleatly cur'd.

Reflect. If this Wound had been dress'd *Tense* after the ordinary manner, I leave

by every one, if such agreeable Success had been expected, seeing the d unquestionably have caus'd fears of the *Diaphragm*, which with Irritation is with great difficulty o re-unite, because of its perpetual *Belly Motion*. In fine, this Wound, insidioso, sover: it might appear, only prov'd Mortal, if it had been i' th' an *Extremous Body*, which by the division of the Midriff, would id an Impediment to its Action: For it knows that Wounds in its nervous easily; and that those in the fleshly become so, when exasperated by ill處 or neglected.

CHAP. XIV.

Ink on One wounded in the Breast.
In the last mention'd Year, and in another said Hospital, one of the day's on the 5th or 6th Day of his And because it had not at all apper mortal, the Bullet having but upon him, whereby the fifth Rib was broken, and the *Pleura* slightly hurt, I in that I might discover the cause of death first I was of Opinion, that

with which he was afflicted when

G

alive,

alive, and which had almost quite dis-
him for Service, had conduc'd much re-
hortning of his Days; But I was convine
my mistake, when I perceiv'd all the Par
the Breast in a very good Condition;
the *Heart* had its *Ventricles* fill'd with *Poly*
of the thickness of a large writing *Q*
and about the length of the little Finger; it
being 4 in the right, and 2 in the left *Ventr*

If we may give credit to Dr. *Lower of*
ford, in his Treatise on the *Motion of the He*
we may easilly enough account for the D
of this Man. He says, that in order to
time the *Circulation* of the Blood, and to
a convenient quantity thereof thro' the Vei
the two *Ventricles* of the *Heart* must be of
equal *Capacity*, and moreover that they n
have a like *Strength* to undergo this Lab
Now this Equality not being to be fo
in the *Heart* of him of whom we speak,
motion must needs have been deprav'd by
Disproportion of the weight of the *Poly*
and by the Inequality of the capacity of
Ventricles: Or because the *Heart* being on
charg'd, could not contract it self without m
difficulty; so that remitting much of its I
tion, it became weak and languishing: .
the *Midriff* also, to which it is always, t
did lose its necessary vigour; especially a
his receiving the Wound: By reason of whi
the Breast could not be dilated without v

id pain, because of the broken Rib, and
the Solution of Continuity of the Pleura,
costal Muscles, and Muscles of Respira-
tion; Wherefore the Heart and Lungs being
rid of their necessary Relief, Suffocati-
d Death were unavoidable.

o' this is a Subject foreign to our pre-
Design, yet we judg'd it would not be
here to take notice of it, for Caution
advice to others in a like Occasion.

C H A P. XV.

of the lower Belly and Loins.

4. IN the same Year 1688, a Soldier
of the Regiment of Montferrat,
Sans Soucy, was wounded by a Bullet,
entering before at the Region of the
, came out behind at that of the Reins,
ng the right Ureter as it pass'd along.
was at first dress'd by one of the Master-
ions of Turin, who us'd to assist us ;
he perform'd after his own Way.
ie Orifice which was in the Belly, not-
tanding the Tents which he us'd, was
up, after the falling off of the Escar of
eguments : But it fared otherwise with
the Back ; for that Surgeon being care-
keep it open with a thick and long Tent,
ring also the Re-uniting of the Ureter.

G 2 which

which occasion'd the *Urine* to come forth at the *Wound*. I having seen him one Day, advis'd the Surgeon speedily to take away the *Tent*, if he would avoid an incurable *Fistula*; but my Words were to no purpose; for had he comply'd with 'em, he would have thought he had offended against the Rules of *Art*, and ancient receiv'd *Maxims*, with which my Advice was inconsistent.

Some Days after, seeing this *Wound* in a very bad Condition, being cover'd with a whitish Flesh almost without Sense, and ready to become a *Callus*, I was willing to prevent the fatal Consequences of that indiscreet Dressing: Wherefore, with a dissolv'd Caustick, I consum'd all that appear'd callous about the Lips of the *Wound*, causing also some of it to pass into the Cavity thereof, and leaving out the *Tent*, I expected the Discharge of what the Caustick had mortify'd: When the Flesh had regain'd its usual Colour, without loss of time, I syring'd into the *Wound* some Balsamic Water. I also us'd the Balsam of *Pers* alone for some Days, and after that, the Styp-tick Plaister of *Croton*, with little longish Compresses that were plac'd on the two Sides of the *Wound*, to press together the Brims. Thus the *Wound* began to be fill'd up, and the *Urine* did by little and little resume its former Course; and in about 18 or 20 Days the wounded Person was perfectly cur'd.

Reflex.

Reflect. In the Progress of this Cure may evidently be perceiv'd the difference between the Method us'd by many Surgeons fondly conceited of their own Opinions, and that I practise ; for, in this Case, had the first been continued but for eight days time, the Wound had become either extreamly difficult, or impossible to be cur'd. This is confirm'd by the Wound in the Belly, the speedy Cure whereof is to be attributed to the motion of the *Intestines*, which, contrary to the Design and Desire of the Surgeon, expel'd the *Tent* so soon as applied, in such sort, that it was compleatly cur'd a little after the falling off the Escar.

Wherefore we can never too much blame those who are so obstinately wedded to the use of *Tents* in Wounds of the lower Belly ; they ought altogether to be laid aside, in spite of all the Objections may be made in their behalf, for which undoubtedly there is no real Ground. Experience gain'd by Practice has so undeceiv'd me touching the Use of *Tents*, that I have left off the Use of 'em, not only in the lower Belly, but even in all other places of the Body, unless upon a very pressing necessity. But in Wounds of the *Emulgent Vessels of the Reins, Ureters, and Bladder*, as also in those of the *Joints*, they occasion Accidents which oftentimes prove mortal, or otherwise leave behind 'em Infirmities that ever after render Life miserable.

C H A P. XVI.
Of the Ventricle.

Obs. 15. ONE of the principal Deputies
the Hospital of Brianson, in
Spring of the Year 1695, receiv'd a Wound
the upper and middle part of the right *I
condrium*, piercing in appearance to the *Ve
cle*, or to the *Pylorus*. I could not find ou
depth of the Wound with the Probe, notw
standing all the postures I could put the
tient in, but an Accident that immediately
out discover'd the Truth of the matter ;
tho' he had supp'd very slightly, he vomite
again all he had taken, mix'd with pure *B*
I immediately dilated moderately the *Woi*
that a free passage might be left to the *E*
that possibly was extravasated in the Lo
Belly, or to the *Matter* which might al
ways breed there. I dress'd him with a Ple
only, on which I applied a suitable Plai
and Bandage. I bled him a little after, and
der'd a very exact Course of Diet : The *B*
was thin, muddy, and corrupted, wheret
perceiv'd the ill Habit and sickly Dispōsi
of his Body. He spent the Night restlesly,
cause of Pains over all the lower Belly, at
violent Fever, which kept him from Sleep.
the Morning I repeated the Bleeding : He
several Motions to vomit, but could not ;

g at all came from the Wound, which rest as before.

ere being two Enemies to be grappled I propos'd to continue the Diversions it Interruption, which was also approv'd our Physicians. We us'd *Potions, Juleps, iſans*, such as were most proper for pu- the Mass of Blood, and blunting the of the Acids; to which I added some *eris.* *Suppositories* were us'd to procure but to no purpose, which oblig'd us to ion from time to time half a pound of ion in a Clyster, but with small Success. Method we continued for seven Days, it being able to observe any considerable ; either as to the *Fever* or *Pain*, in which e was let blood six or seven times. In ward the seventh or eighth Day of the d his Belly was open'd; at first he had of *Bloody Flux*, but afterward he voided blood, tho' in no great quantity. I caus'd *Vulnery Plants* to be boil'd with his and made him take for some days fast- small Spoon full of our *Samaritan Bals* all'd that of the *Scripture*. The Fever ins abated a little, which gave me some of Recovery. The voiding *Blood* by continued till the 14th Day, and then all ngerous Symptoms disappear'd, and the I was compleatly cur'd, without having d any considerable store of *Matter*.

Refled. 'Twas only the Situation o: Wound, together with the Accidents & follow'd; made me conclude, that either *Ventricle* or the *Pylorus* was wounded; H. therefore no certain Sign to direct my ment in this Affair, I try'd if the Sword had given the Wound could make any c very, and found it mark'd with Blood tches, or thereabouts. There needed no to assure me of the Nature of the Wound that which altogether convinc'd me, wa Blood voided by Stool the seventh day c Wound : This having been collected in a quantity as was sufficient to press and forward the Excrement contain'd in the at length made way for it self ; and if w delay'd to bleed him, or done it more sel he would certainly have had a great and dangerous *Flux of Blood*, besides a numb other Accidents that infallibly had follow

It appears then that the True Knowled Wounds which pierce into any Cavity c Body, and hart the inward Parts, depend the Accidents ; and 'tis of high concern young Surgeon, not to confide too much his Probe, thereby to give his Opinion. ought also to make all requisite Diversions to endeavour with all necessary Care to and prevent Accidents, which too often, arriv'd to a certain height, become Pro gainst all our Endeavours.

great many wounded Persons, have been to me, dress'd at first as if their *Wounds* been but slight, which nevertheless I found to be deep, and very considera-

It is sometimes not possible to put the Patient in the same *Posture* he was in when he liv'd the Wound: So that it is an easier to be deceiv'd, if we trust to such un-
in Tryals, as those made with the *Probe*: Parts may have chang'd their Situation, they may be swell'd; or clotted Blood gather'd together in the Wound, may oppose the passage of the Instrument that made the Wound, they slide along between the Interstices of *Muscles*. Oftentimes the Wounded either are not in what Posture they were, or are taken therein; or they are not in a Condition to give an Account. Finally, it is better to exceed in *Exactness*, which prejudice the Patient, than to take up an *Uncertainty*, which may cost the Patient his Life, & the Surgeon his Reputation. Moreover, it appears by the Successes of this, that the *Orifices* of penetrating Wounds, afford very small Assistance to the cure of inward wounded Parts; For it is next impossible to convey thro' them Remedies to those Parts that want 'em, and for which they are design'd: This I am bold to say, contrary to the Sentiments of the An-

cients and of *Fabricius ab Aquapendente*, and some Moderns. It is also scarcely to be expected, that the Blood which flows from these Parts, should come forth by the *external Orifice*, as we have observ'd, unles the lower Belly be quite fill'd up with Blood. And in fine, the keeping open of the Wounds is more pernicious than profitable; serving only to introduce the *Air* into Places, where it almost never fails to occasion Irritations, disquieting Pains, Coagulations, Obstructions or Corruptions, and oftentimes all these Evils together.

Galen affirms, that Wounds in the Bottom of the Ventricle, if not great, are curable: But Celsus is of Opinion they are mortal: Now, how to reconcile such opposite Sentiments, I know not. However, that they are not absolutely Mortal, this Cure is a sufficient Proof: But it is nevertheless true, that they are very dangerous, and their Cure uncertain, being attended with many Accidents, the least of which may prove fatal: Such as *Vomiting*, a Disorder peculiar to this Part; or a Flux of Blood from the branches of the *Arteria Celiaca*, the *Vena Gastrica* and *Gaffre Piploica*; whither scarce any *Astringents* can reach, and where they can't be kept on: Also *Convulsions* may be occasion'd by the wounding of the Nerves that proceed from the *Recurrentis*: Add to these, that by Wounds of this part, the *Chyle* may be evacuated so soon as made.

CHAP.

CHAP. XVII.
Of the Perinæum.

Obs. 16. During the Campaign of the fore-mention'd Year 1688, a Soldier in the Regiment of the Duke of Savoy, and Company of St. George, call'd *la Couleur*, was sent to me, having an *Abscess* which cover'd all the *Perineum*, and part of the *Scrotum*.

After I had open'd it on the left side, at that place where ordinarily the Operation for extracting the *Stone* is perform'd; there came out a great deal of corrupt *Matter*, with much *Urine*, whereby I understood, that by the long stay of the *Matter* the Membranes of the Bladder were vitiated and corroded.

I used neither *Tent* nor *Dilater* to the Sore, but judg'd it sufficient to drop into it a Medicine for cleansing the Ulcer. The Suppuration lasted for the space of 15 days, which yet hinder'd me not (from the very first) to use little, long, and slender Bolsters, for bringing together the divided parts, which I kept fast by a strong Bandage, fitted to the figure of the Part.

After this, perceiving the *Matter* came away in a moderate quantity, and of a laudable consistence, tho' mix'd with some Urine, I used more powerful Incarnatives, Balsamic Water, and the *Balsam of Peru*, and upon these Cro-

lin's

Liu's Plaster. I straitned the Bandage, obliging the Patient to keep his Thighs cloie together : Thus by degrees the Urine resum'd its former Course, and in five or six Weeks time the Cure was finisht'd.

Reflect. This Cure is inconsistent with the Opinion of *Galen*, who, *Aphor.* 18, says, That Divisions of the Bladder cannot be united, because it is a Part without Blood.

I have had many under my hands that were wounded in the Bladder, who were all happily cur'd by the same method : And indeed, if Loss of Substance, occasion'd by the corrupting Matter of an *Abscess*, has been readily enough made up, 'tis-easie to believe, simple Divisions thereof by external Causes may with much more Ease and Expedition be united. This is sufficiently demonstrated by the great number that have recover'd after *Cutting for the Stone*. And if sometime *Fistula's* were left after this Operation, they have been occasion'd by keeping *Tents* in the Wound without any necessity. I know M. *Verdue* imputes this to the sharpress of the Urine, but that I can't be perswaded of, having observ'd in many places in my Travels that the Country People have us'd nothing but their Urine to cure their Wounds.

But if we reflect a little on the Effects produc'd by *Tents*, which many People use in the divisions of this Part, we may soon be convinc'd

:d that they are the cause of this *Accident*,
keeping open a Way for the passage of the
ne, which tho' it cannot run in a full stream
ong as 'tis hindred by the *Tent*, yet this be-
penetrated by the Urine, dulls the Sense of
place, and turns the Flesh callous.

When a Wound abounds in moisture, be-
Humor what it will, 'tis of difficult cure :
is sufficiently confirm'd by the *Fistula's*
ch happen in the Breast or Joints, tho' the
ne have no hand in the matter. Moreover,
onvince us that the Humors wherewith
unds and Ulcers are water'd are a hindre-
ce to their joining and filling up, we need
y to consider these Openings in the Thighs
Legs of *Hydropick Persons*, that are made
Nature, or which we are necessitated to
ke by *Art* : Every-body knows, the Cure of
se is extreamly difficult to be effected, be-
se of the Humidity wherewith they are
tinually soak'd ; which is sufficient to sup-
t what we have advanc'd on this Subject,
I confute such as are of a contrary opinion.
Moreover, the breaking or fretting of the
nphatic Vessels, which occasion the perpetual
ning of watry Humors in Sores, hinders their
-union, in regard that this Serosity dilutes
I carries away the Nutritious Juice, and
ngs 'em to a *Fistula*. Great Suppurations
have the same mischievous Effects, but
se being not so obstinate, are more easily

con-

conquer'd than a running of the *Lympha*.

Finally, if we would effect a speedy Cure in Wounds of the Bladder, we must carefully run whatsoever may widen 'em, or hinder their Re-union; we must apply some powerful *Incarnative*, such as *Balsam of Peru*; a substantial *Agglutinative Plaster* such as that of *Croilius*, with small longish Compresses; and a sufficient Bandage; as hath been said; but above all, we must take care that the Patient be altogether at rest, without any disturbance. These are the Means I have found most effectual, and most successful, in bringing such kind of Ulcers to a perfect Cure.

CHAP. XVIII.

Of the Fundament.

Obs. 17. Monsieur de Monrodon, Captain of a Battalion of the King's Regiment commanded by M. Desbordes, having been four Years ago cured of an *Abscess* in the *Anus*, there remain'd still some *Fistulous Sinus's*, from which there was always discharg'd a great deal of *Matter*. This Inconvenience oblig'd him, in the Year 1695, to demand my Advice. Having observ'd several *Callosities* about the *Anus* with deep and winding Cavitys, I propos'd to him to lay open the *Fistula*, in order to consume these Hardnesses, and cleanse the

the Bottom thereof, without which there was no Hope of a perfect Cure ; but he calling to mind the Torments he had endur'd in the first Cure, put it off for some time ; till falling into an Indisposition, occasioned by his ill Habit of Body, the *Fistula* open'd of it self, about a Month after I had seen him, with an extraordinary Running, and abundance of *Matter*, accompanied with quick and insupportable Pain.

I was at that time in a place at some distance from our Hospital, wherfore he caused himself to be dress'd by a *Mate* of the Regiment, who having nothing but the common Remedies, and understanding only the ordinary Method, fill'd up that large *Cavity* with a great quantity of *Lint*, arm'd with suppurative and putrifying Medicines, which made terrible *Corruption*, and great *Havock* in the Part, increasing the *Suppuration*, and the *Pain*. He then sent me an Account of the deplorable Condition to which he was reduc'd ; praying me to come and see him. When I came, I advis'd him to cause himself to be remov'd unto a Place where I might take care of him my self ; which also was done that same Day. The *Matter* that was retain'd, and the continual *Exasperation* of the Parts, had made a Hole big enough to admit one's *Fist*, which pass'd with a winding course even to the *Os sacrum* ; there was also another *Sinus* that reach'd to the Neck of the *Bladder* : So that
the

the Sick Person could no ways go to Stool, or enjoy one Minute of Repose.

Having taken him under my Care, I dress'd him only with the *Red Balsam* melted with an equal quantity of the *Samaritan Balsam*, which I pour'd warm into the *Sinuses*; and after having fill'd them therewith, I cover'd the *Orifices* with a large Pledget dipt in the same, over which I put a Plaister, and upon this a Compress, making all fast with a convenient Bandage. I caus'd him to use some absorbing Medicines to dull the Points of the *Acids*, and *Ptisans* to purifie the *Blood*, and also some gentle *Purgatives*. This Method succeeded so well, that the Matter, which was thin, putrid, and corrosive, became laudable; the Flesh, which was loose and wasted, by degrees recover'd its firmness; the Patient went to Stool every Day without any Pain; at Night also he enjoy'd the Repose which was so necessary for him: And finally, in one Month's time he was compleatly cur'd, the Sores being brought to a firm and laudable *Scar*, to the Amazement not only of the Patient himself, but of all those also who knew to what a deplorable Condition he was formerly reduc'd, being without all Hope of being cur'd.

Reflect. Those kind of Distempers are extremely troublesome that affect parts on which, by reason of their necessary Use, it is very difficult

difficult to keep the *Dressings*: Such a part is the *Anus*, that is often afflicted with great Supurations, and dismal Putrefactions, which delay and protract a Cure to a formidable length. The Person we have been just now speaking of, is a clear demonstration of this. In the first Cure, six Months time were spent; he endur'd much Pain and Trouble, and after all, it was not brought to *Perfection*: From whence I infer that it is evident, that the *Gentleness* and *Easiness* of our Method, was the genuine Cause of the perfect and speedy Cure that ensued; for that *Organ*, which serves for the Common-shore of the Body, being left at Liberty, and not straitned by an *Extraneous Body*, the Excrements were neither press'd nor retain'd, but were discharg'd with *Ease*, and without *Pain*; whereas on the contrary, when Wounds in this Part are cram'd up with Lint, it is impossible that Evacuations can be made by the *Anus*, but the Excrements must press and squeeze the crowded Lint against the Sides of the Sore; which must needs occasion insufferable *Pains*, and oftentimes also a Flux of *Blood*: And indeed Mons^r. de Monrodon affirm'd to me, that he never went to Stool all the time of his first Cure, but he was still troubled with these two Symptoms.

Finally, we may see, that when *Putrifying* and *Suppurating Medicines* are laid aside, the Parts are by the means of unctuous Balsamicks

gradually restor'd to their former Temperature ; and that when the Points of the *Acids* are broken, and the *Mæf* of *Blood* purify'd by proper Remedies, the *natural Balsam* of the Parts doth cleanse, fill up with *Flesh*, and cicatrize, whenever the Occasion requires.

C H A P. XIX.

Of the upper Part of the Shoulder.

Obs. 18. IN the Year 1678, as I travell'd from *Turin* towards *Rome* and *Venice*, there was brought to me, the Son of an Inhabitant of a certain place call'd *La Rose*, having an Abscefs that cover'd all the *Acromion*, and the upper part of the Shoulder-bone of the right Side, with a great Defluxion of Humour upon the Joint. I shew'd his Father the urgent necessity there was of opening it, and the Accidents that otherwise might ensue, but the fond Love he had for his Son, made him withstand the Proposal. Sometime after this it open'd of its self, and the thinnest Part of the Matter made its way thro' several Holes, into which so many *Tents* were put by a Surgeon of the Place, who dress'd him at his Father's Desire. This Method was follow'd for 2 or 3 Months without any Prospect of a Cure.

At my Return, he was committed to my Care, in a very bad Condition : He was altogether de-

depriv'd of the Motion of his Arm ; several *Cavities* were form'd about the Joynt ; there was a perpetual *Flux* of *Matter* ; and the *Ligament* were relax'd ; which made me fear the falling out of the Head of the *Humerus*. I was perswaded that the Distemper was past Cure, considering the Weakness of the Patient, and of the part affected, and the ill Disposition of his Body, which yet was but a Symptom of the Disease, occasion'd by the *Irritations*, and continual *Discharge* of *Humours*, as I knew by the Sequel. I made however a pretty large Opening in that which I judg'd the most depending part, and straitway took away the *Tense*, tho' at that time I was not altogether convinc'd of their pernicious Effects.

From that time forth the Flux of Matter begun to diminish, which made me endeavour, with all possible speed, thoroughly to cleanse the bottom of the Ulcer, and the *Sinuses*, with a Lotion of *Birthwort*, *Myrrb*, *Sugar-candy*, and *Vitriol*, in *White-wine*, which had very good Success : I did my best also to strengthen the Joynt. Finally, the Cavities were fill'd up by degrees ; the higher Orifices were first clos'd up, and the others afterwards. He was cur'd in 2 Months time ; but his Arm was something more than other two, before it recover'd its Strength.

Reflect. This sudden good Success falling out so unexpectedly, and at a time when I
had

had casually, tho' very seasonably, laid a
the use of Tents, began to open my Eyes
to make me entertain an ill Opinion of them.
For I could blame nothing on this Occasion,
but the *Tents*, which had been so long
in the Sore, for having caus'd all these Ad-
dents, by the Irritation and compression of
Parts; and moreover by hindring the
charge of the *Matter* from one dressing to
ther, whereby it had time to gather, and
ferment, to encrease the Cavities, and w
off the Substance, to moisten the Tendons,
slacken the Ligaments, and to weaken and
tirely ruin the *Part*. Finally, the most
of the Symptom ceasing with the leaving
of the *Tents*, does sufficiently evince,
they proceeded from them: And had the
Method been continu'd for a Month or
a compleat dislocation of the Head of the Shoul-
der-bone, the corruption of the Ligaments,
and incurable *Fistula's*, had certainly ens
and the Patient would have thereby
made lame during his Life.

C H A P. XX.

Of the Shoulder.

Oly. 19. IN the Year 1692, a Soldier of
I Regiment of Sourche, whose N
I have forgotten, was brought to the Ho

at *Brianson*. He was wounded with a Bullet, which enter'd at the foremost and middle part of the *Acromion*, and came out on the upper part of the Shoulder-blade, breaking the *Acromion*, with a part of the *Scapula*, as it went along.

The Orifices were straitway dilated, and dress'd only with Pledgets and the Digestive : Diversions were speedily made, and his Diet order'd. In the first Dressings, several pieces of Bone, that could not be re-united, having been almost wholly separated, came away ; several others that were yet ty'd by a small piece of the *Periostium*, tho' in appearance shaking and ready to fall off, were yet joyn'd again.

Finally, all the adhering Splinters being again united, the Wound began to fill up, and in two Months time, or thereabout, was brought to a firm and laudable *Cicatrix* ; to the great Surprise of all who had been presens at the Dressings, no Accident having happened all the time of the Cure.

Reflex. It will certainly be thought strange, that I permitted the Orifices to be clos'd up, without expecting the Discharge of the Bones : And it will possibly be said that I dress'd not according to Art.

But to me it appears much more reasonable and advantageous, to have preserv'd them, than occasion'd their Loss ; seeing a *Callus* has never

never the becoming Convenience of a Natural Part: And the Excellency of Art consists in curing speedily, if possible, and without Pain, and in preserving the Figure, Substance and Disposition of the wounded Parts. 'Tis certain, that *Health* being the End of the Surgeon's Art, the principle Design is attain'd when the Cure is perform'd.

If that Intention which ought to be the Scope of the Artist, can, by this Method, be *Gently, Easily, Speedily* accomplish'd, there is no Controversie, but that it ought to be prefer'd to all others that are contrary to it.

C H A P. XXI.

Of the Arm.

Obs. 20. **T**HE following Year, a Grenadier of the Regiment of Navarre, call'd *Belle Humeur*, was brought to the same Hospital, wounded with a Shot on the upper part of the left Shoulder-bone, about an Inch, or two Fingers breadth below the Joynt: The Bullet entred on the fore-part, and went out behind, making a terrible Havock. Three or four Days pass'd, wherein he was not dress'd, but only slightly at first, and without making any Diversion. The whole Arm was distended like a Foot-ball, the Orifices were choak'd up, inflam'd, and dispos'd to Gangrene.

I made

I made Incisions in the Orifices, to give breath unto the Wound, and Scarifications over all the Arm; and having dress'd with a Digestive only, without *Tents* or *Dilators*, I let a good quantity of Blood run from the Part, by the Incisions, to empty it somewhat; and afterwards fomented it with Spirit of *Wine* and a little *Sal-Armoniac*: I apply'd over all the Arm *Diapalma* dissolv'd in Oyl of *Roses* and *Vinegar*, which in a little time abated the Inflammation of the part, and lessen'd the Swelling.

Diversions were not omitted, but in spite of all could be done, three *Abscesses* were form'd, one at the bending of the Elbow inwardly, another on the outward and middle part of the Arm; and a third on the hinder and almost lowest part of the *Humerus*: They were all opened, and by their plentiful Suppuration the afflicted Member was eas'd. After 3 or 4 Splinters of the Bone, which stuck by their upper part only to the *Periostium*, were again join'd, I bent all my Endeavours to bring together and unite the Lips of the Wound; and when the Escar was entirely fallen; and the Symptoms vanish'd, I used only a simple *Incarnative*, dressing but once in two days. The *Suppuration* was but small, and the Orifices began apparently to fill up; and in 30 days were quite skin'd over; so that from thenceforth I used the Bändage and Plasters, in order to fortifie
the

the *Callus*: And, now his Diet is encreas'd, and he is able to rise from his Bed ; at last he left the Hospital to return to his Regiment, 44 days after he had receiv'd the Wound.

Reflec&. The delay of the *Diversions*, as it evidently appears, was one of the chief Causes of the Accidents that follow'd on this Wound ; and 'tis plain, if *Tents*, *Dilaters*, or other exasperating things had been used in dressing, they had infallibly proved an Impediment to the discharging the Part and ripening the *Abscesses*, for Reasons adduced in the first Part, where we discours'd of their fatal Effects.

Nature is, in such cases, sufficiently perplex'd without the additional Oppression of the most grievous of all her Enemies ; she is as it were fetter'd, and can't act : And when by a healthful and critical Motion she endeavours to deliver her self, as in the *Abscesses* of the former Cure, she is unable to produce any desirable Effect, so long as the Wound is cram'd full of Lint. The most frequent Consequence of this is a stifling the *Natural Heat*, after which follows a *Gangrene*. There has but few bad Accidents follow'd upon Wounds treated after our Method, and I dare affirm, scarce any have miscarried under our Care, tho' more dangerously wounded than this Soldier whom we have been speaking of, all which is owing to the gentleness of this Way and use of Diversions.

C H A P. XXII.

Another Wound in the Arm.

IN the Year 1690, soon after the War was declar'd in Savoy, a Soldier of the Regiment of Pondeux, nam'd *le Jeune*, was sent to the Hospital at Briançon, where he got a violent Blow with the handle of a *Sabre*, on the middle and outward part of the *Humerus*, whereby the *Bone* was broken, with a *Wound* and great *Contusion*. The portions of the Bone stuck out at the *Wound*, which did still adhere to the *Pieces*. I plac'd them one by another, as well nimbly as possibly I could, endeavouring to give them their natural Position. I then part with a strong dissolving *Balsam* of the arm, which I had caus'd to be prepar'd by my Apothecary. I joynd the Lips of the *Wound*, by a *Incarnative*. I gently roll'd the *Wound* up with a Band about three Fingers breadth, and with another as much longer, applying a *Plaister* made of *Diapathum*, mix'd in Oil of Roses and Vinegar between Bands, the middle part whereof being close to the *Wound*, the ends met upon it, and cover'd it: Upon this I put a Compression of the same figure and bigness, folded *twice or four doubles*, and dipt in warm

Hot Wine:

the *Callus*: And now his Diet is encreas'd, and he is able to rise from his Bed; at last he left the Hospital to return to his Regiment, 44 days after he had receiv'd the Wound.

Reflex. The delay of the *Diversions*, as it evidently appears, was one of the chief Causes of the Accidents that follow'd on this Wound; and 'tis plain, if *Tents*, *Dilatets*, or other exasperating things had been used in dressing, they had infallibly proved an Impediment to the discharging the Part and ripening the *Abscesses*, for Reasons adduced in the first Part, where we discours'd of their fatal Effects.

Nature is, in such cases, sufficiently perplext without the additional Oppression of the most grievous of all her Enemies; she is as it were fetter'd, and can't act: And when by a healthful and critical Motion she endeavours to deliver her self, as in the *Abscesses* of the former Cure, she is unable to produce any desirable Effect, so long as the Wound is cram'd full of Lint. The most frequent Consequence of this is a stifling the *Natural Heat*, after which follows a *Gangrene*. There has but few bad Accidents follow'd upon Wounds treated after our Method, and I dare affirm, scarce any have miscarried under our Care, tho' more dangerously wounded than this Soldier whom we have been speaking of, all which is owing to the gentleness of this Way and use of *Diversion*.

CHAP.

C H A P. XXII.

Of another Wound in the Arm.

II. IN the Year 1690, soon after the War was declar'd in Savoy, a Sol-
of the Regiment of Pondeux, nam'd la ague, was sent to the Hospital at Briançon,
had got a violent Blow with the handle Halbert, on the middle and outward part
left Humerus, whereby the Bone was bro-
pieces, with a Wound and great Contusion.
veral portions of the Bone stuck out at
Wound, which did still adhere to the Pe-
um. I plac'd them one by another, as
y and nimblly as possibly I could, endea-
ing to give them their natural Position. I
the part with a strong dissolving Balsam
warm, which I had caus'd to be prepar'd
ontusions. I joyn'd the Lips of the Wound,
apply'd an Incarnative. I gently roll'd the
with a Band about three Fingers breadth
e the Wound, and with another as much
v it, applying a Plaister made of Diapal-
issolv'd in Oil of Roses and Vinegar be-
n the Bands, the middle part whereof be-
posite to the Wound, the ends met up-
and cover'd it: Upon this I put a Com-
, of the same figure and bigness, folded
three or four doubles, and dipt in warm

H Wine:

Wine, and then a piece of Pastboard, which resting with its ends upon the two Rollers, and embracing and keeping fast all the Wound-apparel, came together, and was ty'd on the hinder-part of the Arm.

In this Pastboard there was a Hole cut out, where it covered the Wound, to which a piece of the same was fixt, to be taken off at each Dressing, and afterward put on : This was made fast with a little Band, which I roll'd about all the Pastboard after I had apply'd my Dressings, in such fashion, that without disturbing either the Arm or the Pastboard, I had nothing to do but, when there was Occasion, to untie the Band, take off the piece, and lift up the two ends of the Compreis and Plaster, and so to embrocate the Wound, and then to dress it with a *Pledget* only, and do it up again.

In this manner it was dress'd once a Day, for 5 or 6 Days, after which I gently took off all the Dressings, except the Rollers, and changing the Plaster and Compress, I dress'd but once in two days. No Accident happen'd, for the Contusion was quickly dissolv'd ; no Bones were discharg'd, and the Suppuration was but little, *Diversions* having been made from the very first. The Wound was fill'd up, and compleatly skin'd, about the 22d Day of the Wound, wherfore I thenceforth dress'd it only with Rollers, the Plaster *pro Fracturis*, and the necessary Splints. Since that time I have

: not seen him, because then we left *Lu-*
e; but 'tis certain he was past all Danger.

effect. If this Way of Dressing be compar'd
that of many Surgeons, who not only fill
he Sores with Lint, but also at each Dres-
move to and fro the broken pieces of Bone,
der to promote their Separation, it may
en how different the Success will prove.

I treated this Wound in a rigorous man-
such Accidents had undoubtedly happen'd
ould have baffled my Care. The Sup-
tion would have been great, and thus
pieces of the Bone, thereby quite separated
carried into some Cavity, had caus'd man-
tbcesses and *Sinuses*; which Disorders of-
imes caufe a necessity of Amputation, and
n the Strength is decay'd, they bring on
th. After this I make use of a piece of white
, form'd in the same fashion as the Past-
d, with a Window opening upon the
nd, which being lift up, I dress'd it with-
moving the Body of the Machine. But
ig in those Places where Hopitals are we
not every thing requisite at hand, the
eon must supply that Defect by his own
nuity.

CHAP. XXIII. *Of the Fore-Arm, or Cub*

Obs. 22. IN the same place, a Soldier of the foresaid Regiment receiv in the *Fore-Arm*, on the middle and part, which broke the *Radius*, and away a part of the *Cubitus*.

He was dress'd after our *Method*, Cavity of the Wound was filled with a mixt of very fine Lint dipt in a mixt *Balsam*, and a little *Linimentum Arcuatum*, easeth Pain, promotes the fall of the Bone, and resists a Fluxion of Humours.

Operations were made, and his Diet ordered.

We dress'd him after two Days, and two or three pieces of Bone stickin Lint. In the second Dressing, I set the Bone, keeping it firm with little Compresses, and with Pastboard : One of these I put upon the fore-part of the Arm upon the broken Bone, another on the inward, and a third on the outward-part, making them all fast with Rollers, one above, and the other below the Fracture : This *Apparatus* kept the Bone straight, and serv'd instead of a *Draught*. Over all we apply'd the Pastboard, and supported the Arm with a Sling. The Motion was very moderate, and another Bone came afterwards away : We dr

in two Days, and on the twelfth or fif-
i day of the Wound the Flesh began to
the Bone, for which Cause we dress'd
nly once in three Days, and that very
' and speedily. Towards the twentieth
the Wound began to be fill'd up. The
t of the *Cubitus* was made up with a *Ca-*
lid the *Radius* recover'd without Exfolia-
and all in four Weeks time ; after which
us'd a Roller on the fractur'd place.
t this time we broke up from *Lucerne*,
I have not seen him since.

Let. The good Success, the Expedition,
ie Gentleness of these *Cures*, ought in my
ion to give some Reputation to this way
essing. I have not seen, since I first enter'd
Practice, any Method follow'd that has
either so short, so easy for the Patient, or so
n in the Consequence. Hereby those Pains
prevented which ordinarily bring Fevers,
are attended with many other Accidents :
Suffles, *Fluxions*, and *Inflammations* are a-
d : The *Matter* is but litt'e, and that
able : The wounded Person can take solid
ishment, and necessary *Rest*, whereby all
aculties become more vigorous, and Na-
nore active, *Flesh* is more easily generated;
a *Callus* more speedily formed, and, in
every thing with more facility re-esta-
'd, and reduc'd to its former State.

the *Callus*: And now his Diet is encreas'd, and he is able to rise from his Bed ; at last he left the Hospital to return to his Regiment, 44 days after he had receiv'd the Wound.

Reflect. The delay of the *Diversions*, as it evidently appears, was one of the chief Causes of the Accidents that follow'd on this Wound ; and 'tis plain, if *Tents*, *Dilatets*, or other exasperating things had been used in dressing, they had infallibly proved an Impediment to the discharging the Part and ripening the *Abscesses*, for Reasons adduced in the first Part, where we discours'd of their fatal Effects.

Nature is, in such cases, sufficiently perplext without the additional Oppression of the most grievous of all her Enemies ; she is as it were fetter'd, and can't act : And when by a healthful and critical Motion she endeavours to deliver her self, as in the *Abscesses* of the former Cure, she is unable to produce any desirable Effect, so long as the Wound is cram'd full of Lint. The most frequent Consequence of this is a stifling the *Natural Heat*, after which follows a *Gangrene*. There has but few bad Accidents follow'd upon Wounds treated after our Method, and I dare affirm, scarce any have miscarried under our Care, tho' more dangerously wounded than this Soldier whom we have been speaking of, all which is owing to the gentleness of this Way and use of *Diversion*.

CHAR.

y the Part of the Matter and clotted
l wherewith it was fill'd. But being
infurnish'd with such things as were ne-
y for my Design, I apply'd a Button of
l to the Aperture of the Artery ; and
g fill'd the Wound with Lint, and ap-
the other Dressings necessary on such
ions, I let him Blood twice, but in small
ities, and gave him certain Emulsions,
in were mix'd some Anodine Medicines,
rd the Motion of the *Blood*. I let 2 days
ithout Dressing, but on the third, I found
ad done was to no purpose. At the place
the *Artery* was opened, there was a con-
sole and painful *Swelling*; the *Lint* that
he Wound was heav'd up with the Pul-
and a bloody Water came out, which
'd the sudden return of the Bleeding. I
to be prepar'd my Troches of *Rose-*
Gun-Dragon and *Vitriol*, with ~~ice~~ good
ick-water, and two days after I took out
at fill'd the Wound : I also took away
car made by the *Vitriol*, and the *Fungus*
as grown in the Wound; which I fur-
ilated to give vent to the Blood that had
d it self thro' the Flesh, beyond the ex-
the Wound. All this time I repress'd
eeding by the *Turnkey*, which I caus'd to
kned, to discover again the opening of
ery, to which I apply'd two little Tro-
upported by a small Compress dipt in

the *Callus*: And now his Diet is encreas'd, and he is able to rise from his Bed ; at last he left the Hospital to return to his Regiment, 44 days after he had receiv'd the Wound.

Reflect. The delay of the *Diversions*, as it evidently appears, was one of the chief Causes of the Accidents that follow'd on this Wound ; and 'tis plain, if *Tents*, *Dilaters*, or other exasperating things had been used in dressing, they had infallibly proved an Impediment to the discharging the Part and ripening the *Abscesses*, for Reasons adduced in the first Part, where we discours'd of their fatal Effects.

Nature is, in such cases, sufficiently perplext without the additional Oppression of the most grievous of all her Enemies ; she is as it were fetter'd, and can't act : And when by a healthful and critical Motion she endeavours to deliver her self, as in the *Abscesses* of the former Cure, she is unable to produce any desirable Effect, so long as the Wound is cram'd full of Lint. The most frequent Consequence of this is a stifling the *Natural Heat*, after which follows a *Gangrene*. There has but few bad Accidents follow'd upon Wounds treated after our Method, and I dare affirm, scarce any have miscarried under our Care, tho' more dangerously wounded than this Soldier whom we have been speaking of, all which is owing to the gentleness of this Way and use of *Diversion*.

CHAP.

CHAP. XXII.

Of another Wound in the Arm.

Otſ. 21. IN the Year 1690, soon after the War was declar'd in Savoy, a Soldier of the Regiment of Pondeux, nam'd *la Montague*, was sent to the Hospital at Brianſon, who had got a violent Blow with the handle of an Halbert, on the middle and outward part of the left *Humerus*, whereby the *Bone* was broken to pieces, with a *Wound* and great *Contusion*.

Several portions of the *Bone* stuck out at the *Wound*, which did still adhere to the *Pectenosteum*. I plac'd them one by another, as gently and nimbly as possibly I could, endeavouring to give them their natural Position. I rub'd the part with a strong dissolving Balsam very warm, which I had caus'd to be prepar'd for *Contusions*. I joyn'd the Lips of the *Wound*, and apply'd an *Incarnative*. I gently roll'd the part with a Band about three Fingers breadth above the *Wound*, and with another as much below it, applying a *Plaister* made of *Diapathma* dissolv'd in Oil of Roses and Vinegar between the Bands, the middle part whereof being opposite to the *Wound*, the ends met upon it, and cover'd it: Upon this I put a *Compress*, of the same figure and bigness, folded into three or four *doubles*, and dipt in warm

H

Wine:

C H A P. XXV.

Of the Hands.

Obs. 24. Since the beginning of the War I have had under Cure very many whose Hands were pierc'd, torn, or halfe cut away by such Fire-Arms as burst, which is a thing very ordinary in Armies. Many I have likewise dress'd, that had their Hands shot thro' with Bullets, and cut with sharp Instruments, of which I shall not speak in particular. But I may justly say, that all those I dress'd in these later times, though being Wounds the part has been very much scatter'd and torn, have been always cur'd, without losing what remain'd of the Member, with little or no discharge of Splinters & Bones, or loss of Fingers, or their Joynts.

In this kind of Wounds, as well as in others, I have avoided frequent Dressing, and the use of putrifying Medicines: And I own I have ever found the Spirit of Wine a very successful Remedy in Wounds of the Extremities, and in those of Nervous Parts. I have used it chiefly in Hospitals, where it brought about a speedy Relief.

Many of the Ancients have ordered to let open for some considerable time the Wounds of the Nerves and Tendons; to give ye

such Matter as by its stay might corrupt the Substance of the Parts.

But Experience has taught me, that 'tis much more beneficial to the Patient in such Cases, to hinder, than to promote the Suppuration; by doing betimes what is necessary to prevent Fluxions upon the Part; sometimes applying good Defensives to the superior Parts, to repress the activity of the Blood; and sometimes using resolving Anodines to the place afflicted, if there is need; to prevent or take off the *Pain*, from which most commonly the Accidents proceed that attend such Wounds, and to guard off at the same time the Attempts of the *Air*, which is the greatest Enemy of the nervous Parts.

I can aver, that by using this Method I have cur'd such Wounds much more suddenly than I could any other way: And since all are agreed that the *Air* is pernicious to Wounds in general, I believe none will question but those of the *Nerves* receive thereby a more notable prejudice, than those of any other Parts of the Body, considering their Tenderness, the Nature of their Substance, and their Temperament. I leave it then to Consideration, whether Wounds of this kind could be defended from the Injuries of the *Air*, if they were kept open, according to the Opinion of the *Ancients*.

But

But it will be said, that 'tis extremely difficult, after all possible Precaution, to avoid the use of *putrifying* and *irritating* Medicines and of *Dilatets*, in Cures that are tedious. For if such things as breed Flesh, and are balsamick, be us'd when the Wound at the same time must be kept open, there will be a necessity of consuming incessantly the Flesh with *Catharticks*, which are very apt, by the pain they cause, to produce ill Accidents, especially in Parts so sensible as these.

Now to this I answer, That if Suppuratin and Putrifying Medicines are us'd, there almost ever infallibly follows a great Suppuration, and sometimes a total Dissolution of the nervous and tendonous Parts, especially *Tents* or *Dilatets* be also employ'd, which, but for a small time they touch such Parts, oftentimes draw on Incurable, and sometimes Mortal Symptoms.

Wherefore I have ever judg'd it best to close up the Wound as soon as possible on such Occasions, especially when there is an extraneous Body that of necessity must be drawn forth; or if all requisite Diligence, has been already us'd at first Dressing to that intent. In fine, tho' I have always not only avoided with all possible Care the using of putrifying Things, but also endeavoured to dress as seldom as might be, I dare affirm that in this way of Practice, there never happened

pened even the least Accident, to all that great number of wounded Persons that was dreit according to it, in our Hospital at *Brianson*.

Pareus, Book 10. Ch. 9. shews, That by this Method he successfully cur'd the Pricking of a *Tendon*, which King *Charles* the ninth had receiv'd in Blood-letting: Though in another Place he finds fault mightily with those who use the Stitch to wounded *Tendons*: He would undoubtedly have been of another Mind, had he liv'd, and seen, as I, and many others have done, how often the deceas'd M. *Bien-aise*, an expert Surgeon, has perform'd the same with Success in his House at *Paris*. But after all, we may maintain, that he is not the first who has practis'd the stitching of a *Tendon*, for in former times it was usual, and many of the Ancients have done it.

C H A P. XXVI.

Of the Thigh.

Obs. 25. IN the Year 1686, when the *Vaudois* were driven from the Vallies of *Lucerne*, one *le Grand*, a French-man by Birth, Sergeant in the Regiment of Guards, and at present an Officer in a Regiment of Fusiliers belonging to *His Royal Highness*, being wounded by a Bullet in the upper and outward part of the right Thigh, and the Ball not to be found,

was

was brought to the Hospital at *Lucerne*. He had lain a Day and a Night helpless upon the Ground ; which occasion'd a considerable Fluxion, and an *Inflammation* of the Part. I made large Incisions, and spar'd no Pains to find the Bullet, but all in vain.

He was forthwith let Blood, and had a Glyceriter given him, an exact Course of Diet being order'd. The Bleedings were repeated, with the other Remedies for withdrawing the Humors from the Part. The Swelling and Inflammation were lessen'd ; and I began to think, that things were in a pretty good Condition : I kept in the Wound only a little Tent, about the length of two Fingers-breadth, very soft, and of pretty fine Lint.

Thus the first Accidents were vanquish'd, but others more troublesome and more obstinate yet remain'd ; for the Suppuration and Flux of Humours was so prodigiously great, that I verily believ'd his whole Body would thereby have been dissolv'd. At every time we open'd the Wound to dress it, which was twice a Day, more than a Pint of Matter came away, besides what was discharg'd between Dressings, which might be judg'd as much : In the mean time the Strength of the wounded Person was more and more impaired, and his Body insensibly wafted away.

I could ascribe all these Accidents to nothing else but the Bullet, which remain'd in
the

Member: And this I the rather inclin'd
ink, in regard that almost all the Bullets
were drawn from Wounds during this
aign, were full of *Sublimate or Glass,*
many others of other Metals, and Tin.

vised with M. *Conte*, then at *Lucerne*,
on in Ordinary to his Royal Highness,
eing acquainted with the Order of Cure
the Symptoms, was of Opinion, that by
ng the Moiture might be dry'd up;
as accordingly put in Practice.

as as eagerly desirous to effect this Cure,
all my Reputation had depended upon
ucces: And indeed it appear'd as if
dence had thereby design'd to open my
and to make use of me for the Relief of
others, I being qualified for that end by
xperience I attain'd in this instance.

e wounded Person was greatly disorder'd
Purging, yea, in such a sort, that I fear'd
grene: The Fever was encreas'd, and the
it had quitted all his Hopes, notwithstanding
ng the Assurance he had conceiv'd of

an inexhaustible Fountain. I consider'd with my self a thousand times, if there was any thing more I could do, or any thing further to be us'd. I had perform'd all that Art prescribes, to dry up that Matter wherewith the Part was ever fill'd, having us'd not only a hard Bandage with expulsive Compresses, to hinder its gathering together and stay in the part, but also sudorifick Decoctions, tho' all in vain. I was also thinking to make a Counter-Opening under the Thigh, to give a more free course to the Matter, and to hinder its Stay ; but on second Thoughts, I believ'd it would be to no purpose.

M. *Conte*, and generally all who saw the Man, despair'd of his being cured ; and told me, that I vex'd my self in vain, as if all my Reputation had depended upon the Cure.

Tho' I had hitherto tried all sorts of means in vain, yet I was obstinately bent to find out some other way, by my own Consideration, since the wounded Person himself was also desperate.

As I have formerly said, I have hitherto kept in the Wound a little *Tent*, about 2 Fingers breadth long, and very soft: This I resolv'd altogether to lay aside, and to dress the Wound with a *Pledgit* and *Plaister* only, and such a Bandage as might be sufficient to keep 'em on.

This frightened the poor dying Man ; and it was with great difficulty that now I could

obtain his Consent to have that power over him which of right belong'd to me, and what formerly he had so freely granted.

In the Evening, to my great surprize, I found him in a much better Condition: The Matter came not away in so great a quantity: That Night he slept much better than he had ever done since he receiv'd his Wound; and in the Morning he was yet better: This Evening the Matter began to be of a good Consistence, and to be discharg'd in moderate quantity. Henceforth I dress'd but once a Day.

His *Fever*, which had continued from the beginning, left him altogether, and the second Day after the leaving out of the Tent; and from the fourth, he was drest only once every other Day; he also began to eat, and to recover his Strength: From the eighth Day nothing further came from the Wound, and on the twelfth after the disuse of the Tent, he was entirely cured; the Truth of which I call **G O D** to witness.

Reflect. This is the Cure, as I sincerely protest, to which I have been most oblig'd. It was this which made me embrace that *Method* which now I expose to publick View, and which from this time forth succeeded so happily with me: And it is certain, that I had infallibly cur'd my Patient at once of all his Distempers, if I had continued but only for 7 or

relates, that he drew forth the Head of an Arrow, from the *Groin* of a Man, after it remain'd six Years in his Body, without any Accident happening during all that time.

Alexander Benedictus reports, that a certain Man was wounded in the Back with an *Arrow*, the Head whereof could not be got out, being bearded, and two Fingers-breadth in length, which yet, two months after the Wound was cured, the Patient voided by Stool.

Hildanus, in his 6th Observation, tells us, That he took out the Point of a Knife which had remain'd two Years among the acute Processes of the *Vertebr.e* of the Loins, without producing any Accident there.

Let us now therefore acknowledge *Nature* wonderful in her Operations! These Examples, together with my own Experience and Reason, have made me very cautious in the drawing forth *Bullets*, when they are not lodg'd in places where they may marr or quite destroy the Action of any Part, nor in danger of falling into some Cavity. This Cure is of itself enough to convince any one of the Advantage, and to establish the Credit of my Practice, it having been publickly perform'd, yea, authoriz'd and approv'd, by many learn'd Physicians and Surgeons of the Court of Savoy.

Since that time, I have in several places, and in divers Hospitals, cur'd many who have had their Thighs pierc'd quite thro', without either

Tentes, or *Dilaters*, save only on the first
ing, to support and contain the *Astringents*
ssary to stop the Bleeding. This is contra-
Pareus's Method, who, in the 37th Chap.
is Tenth Book of *Wounds*, affirms, That
nds of the Thighs and Legs ought to be
long open, that the corrupted Membranes
have time to suppurate and come away.:
f indeed Nature, that has brought solid
ies, such as *Iron*, *Bullets*, *Bones*, &c. to the
ices of Wounds, even after they have been
nsiderable time cicatriz'd, as hath been
ierly observ'd, were not sufficient to expel
e Shreds of corrupted Membranes.

ut, to avoid corrupting of the Part, the
unds must be speedily clos'd up, *Tents* and
iters laid aside, the *Air* must be carefully
cluded from the wounded Parts, great *Suf-*
tives must be caishier'd, and we must dress
quickly and as seldom as possible.

CHAP. XXVII.

Of the Knees.

26. IN the Year 1691, when I was at
Pignerol, a Captain of a Battalion
the King's Regiment, commanded by M. de
moy, was wounded in the right *Knee* with
ullet, which went in at the outward and
idle, and came out at the inward and up-
per

per part thereof. He was dress'd for four whole Months by a Surgeon of the Army, very well skill'd in his Employ, but follow'd the common Method : He had also advis'd with the Surgeon-Major of *Pignerol*, who had given over hopes of the Cure. The Surgeon that had him under cure, not thinking to make any long stay in this City, propos'd to me, after so long a time, to undertake the Care of dressing him, which I accordingly did.

I found five or six Holes in his Knee, all of 'em fill'd with hard Tents, and long enough to reach to the bottom ; his Leg and Foot was swell'd, his Body very thin, and he had a slight Fever, which had never left him from the first time he receiv'd his Wound, with perpetual Watchings, and a loathing all kind of Food.

I began to leave out all the *Tents*, and with a small Incision at the lowest part thereof I dilated the Wound. I laid aside the *Aromatick Wine*, which had been so long us'd to no purpose, and left off the use of an Injection, which being apply'd twice a day, by the intolerable Pains it occasion'd, had mangled all the Joint, and caus'd a communication amongst all the Holes, which were exactly stopt with the Fingers every time that Medicine was employ'd, that it might make some stay in the Part.

I dress'd him indeed with the Remedies formerly us'd, but I took care to apply 'em more conveniently, and to accommodate 'em better

the nature of the Part, and of the Wound. When I came to see him the day following, on as he saw me he embrac'd me, and in the presence of many Officers, that he expressibly oblig'd to me ; and, which no less surprizing than true, he told me, he had slept all Night, tho' he had not so since the first day of his Wound ; that it no Pain in his Knee, and believ'd his was gone.

I was so encourag'd with this good Success that from thenceforth he thought himself well. For 5 or 6 days he was dress'd after the manner once a day, and afterwards once every other day, without changing the Ointments and Plasters, which had been so long before without any advantage. The Cure compleated in less than a month ; after which I advis'd him to go into his own Count'nance and use the *Waters*, in order to strengthen a part weakned by the frequent dressing, and (as far as possible) to enable him freely to extend it.

flet. It appears by this Cure, that a *good* flet is the most effectual Remedy, and the principal Instrument in healing Wounds. If man will but be at the Pains to weigh this

I doubt not but he will be convinc'd, that the *Tents*, the *Injection*, and the other humbling things wherewith the Part was perpetual-susten'd, were the Cause of the deplorable

ble

ble condition of the Wound. Now, if such a thing, as it often falls out, had hapned to a common Soldier, under the necessity of being sent to an Hospital, and treated in the common way, he must have endur'd twenty Deaths by the tedious and painful Dressings ; nay, it is certain he could never have held up under 'em, being at the same time depriv'd of all necessary Conveniencies, breathing in an unhealthful Air, and having Food neither so nourishing, nor given him at such seasonable times as a Captain might, who was willing to spare nothing that might conduce to the preservation of his Life.

The Account I have given of this Cure has nothing in it that is not exactly conformable to the Truth. The Patient himself made the same Relation to M. *Goiffons*, a very learned and experienc'd Physician of *Lyons*, and Chief Physician of the King's Armies in *Italy*.

'Tis true, the Wounds of the Joints require very great Care, there being few that are not noxious to more troub'lesome Accidents ; and when the Part is much shatter'd, they are judg'd mortal. However, I'm very certain great Abuse is committed in the manner of Dressing, and this I judg'd my self oblig'd not to conceal.

The Joints moreover are Nervous or Tendonous Parts, and known to be of a cold and moist temperament, wherefore they must be guarded from the Attacks of the Air ; they must

not be exasperated by the Touches of
and Dilaters; putrifying Medicines must
press'd, because they weaken the Parts
upon which they are applied, and ruin such as
nervous and Tendonous.

those liquid things that are commonly
so hurtful to the Joints, such as *Aroma-*
Vine, *Fomentations*, *Injections*, &c. Such
as are heating and drying are profitable.
must endeavour to hinder the Waste of
spirits, and seasonably to perform the ne-
cessary *Diversions*, observing a drying and slen-
driet, and using to the Wound *Sarcotick*
cines, such as *Balsams*, or *Spirit of Wine*,
ing also long and frequent Dressings. If
Method is follow'd, all the Accidents,
ordinarily accompany Wounds of this
e, will be prevented.

bricius ab Aquapendente, in his first Part,
I, Chap. 49, treating of *Wounds in the*
, says, That they are not only extream
to be cur'd, but also dangerous and mor-
And he adds, That the Cure is dange-
nd difficult, both in regard of their own
ze, and also of that of the Joints ; for
e being the Cause that produces Flesh,
lls up Wounds, is less vigorous in the
, which are cold in temper, and destitute
od and Flesh, than elsewhere, especially
weaken'd yet further by a Wound.
erwards, in the same Chapter, being sup-

ported by the Authority of *Galen*, in his third Book of *Fractures*, he affirms, That whatever lies under the Skin is advantag'd by being cover'd therewith : And considering that the Joints are cold, without Blood, and without Flesh, he says, that their natural Heat is soon extinguish'd, especially when expos'd to the cold Air. These were the Thoughts of this Author, who was accustom'd to use the *Stitch* on such occasions, to protect this kind of Wounds from the Injuries of the Air.

He further adds in the same Chapter, That Wounds in the Joints ought not to be left open, or expos'd to the cold Air, because thereby we run the hazard of quenching the Natural Heat, and of a *Gangrene*; or if this should not fall out, there is seldom any Digestion in the Wound when so treated.

These Parts then, as hath been said, are naturally very weak, destitute of Heat, and plentifully water'd with moisture, which, by reason of the abounding Salts, is apt to contract an Acrimony and Malignity, especially when it is retain'd in the Part with *Tents*: Now this same Moisture, insinuating it self into the Pores of the nervous Fibres, fails not to harden them, and render them callous; from whence it comes, that these Wounds often end in *Fistula's*. 'Tis observable also, that if there happen any Change or Disorder in the Blood, this Humour becomes so corrosive,

: it sets the Bones, and destroys the Parts where it comes. Long and frequent Dressings likewise occasion the like Accidents, because of the Admission of the Air that increaseth the force of the Acids, and easily destroys small Portion of Spirits and Heat with which these Parts are furnish'd.

All these things are of the greatest Importance, and well deserve our serious Consideration : And if Reason in any thing ought to prevail over Custom, 'tis chiefly here, where Life of Mankind is concern'd, which is a g so precious, that it very well merits our particular Care.

And indeed I am of the Mind, that the Authority of so famous a Person as *Fabricius ab Lapponia* ought to give some Reputation to my Opinion. But before I conclude this Chapter, I will moreover affirm, that if Joints in the Joyns are hard to be cur'd, often degenerate into *Fistula's*, this is not much owing to the weakness of these Parts, or the Manner used by most part of Surgeons in dressing them.

CHAP. XXVIII.

Of the Leg.

27. **O**NE la Grandeur, who was in the Guards of the Marshal de Catinat, general of the King's Forces in Italy, being

at the Siege of Luxemburg in the Year 168 had received a Wound with the *Shiver of Granade*, in the left Leg, which left behind an Ulcer near the inward Ankle, that baffled the Care of the Surgeons.

This Man being at Pignerol, about the beginning of the Year 1692, took a Resolution to have this Ulcer cur'd, tho' it had been of pretty long standing, and was to him instead of an Issue. Here he finds a Surgeon plia enough, who, without foreseeing what Accidents might follow, or considering the Evil Disposition of Body, and the bad Constitution of the Patient, takes him in hand, dress him, and heals up his Ulcer.

But in a little time after, he had ample Occasion to repent the rashness of his undertaking: For the impure Humours of that unwholsom Body, which had taken their Course that way, not finding any Outgate, were in degrees gathered together in the Member and by their Stay, arriv'd at a pitch of Mortality sufficient to cause a *Gangrene*.

On the middle and inward Part of the Leg there arose a *Tumor*, or Swelling, which was forthwith taken by his Surgeon, who had very little understanding in such Cases, for a *Pblemon*; whereupon without further Deliberation he begins with Bleeding, which he repeated five or six times.

The Humour retain'd in the Part not being able to come to a perfect Concoction, be-

: of the defect of Heat and Spirits, made malignity appear, and corrupted a great part of the Leg. The *Gangrene* appeared, the Surgeon made an opening in the first part of the *Tumor*, from whence came a little foetid *Lympba*. But the Disease encreas'd every moment, both the Patient and Surgeon were alarm'd, and sought out somebody to advise with about cutting off the Member.

was order'd by the Marquis of Champlain was then at *Pignerol*, to go see him, and employ my utmost Care to retrieve him if possible, from that miserable Condition. I made incisions in his Leg, from the Knee to the ankle on the inside, and touch'd it with a piercing Spirit so far as the *Gangrene* allow'd : I ordered inwardly the strongest Laxatives, not forgetting *Oriental Bezoar*, and *ew Wine*, which I caus'd to be given him time to time.

Three Days pass'd over, in spite of all I could do, before a Stop was put to the progress of the *Gangrene* : The unseasonable Weather, his Diet, his Fever, and the other Troubles with which he was oppress'd, had so imbroiled his Strength, that nothing could be done from it. Nevertheless, I judg'd no way would be more compendious and effectual than that of *Sweat*, to reach the origin of the Disease, and to ease Nature overwhelmed with

a World of Impurities : Wherefore I did my Endeavour to procure it ; and for that purpose made him take one Evening a gentle Sudorifick.

This Remedy had all the success I could expect ; the Patient sweated a little that Night, which forthwith put a stop to the Course of the *Gangrene*. The Escar came away, but very slowly, because of the weakness of the Patient. But when this was entirely separated, another Accident superven'd, which threw us into a new perplexity : For a large *Tendon* that had been altered by the *Gangrene*, and was wasted by the Suppuration, being join'd to its Original by a small Portion only, drew after it the Matter, and notwithstanding all our Care, form'd a very considerable *Abscess* under the Joyns of the Knee, which encreasing by little and little, overspread all the hinder part of the Thigh.

I dilated the Wound, making a fresh Incision, wherein I put a very small Dilater, to hinder its closing up : I us'd this Dilater for seven or eight Days, in which time the Matter increas'd, the *Sinus* was enlarg'd, and the Thigh swell'd and became painful.

I resolv'd then to find the lowermost or most depending Part, that I might there make a Counter-Opening, whereby to give a passage to the Humours, and to hinder their Abode in the part : So I made a mark without,
upon

upon the Place I pitch'd on for that Operation.

Nevertheless, I was willing first to try all other means I could think on: And accordingly I began to leave out the *Dilater*, which I had only kept between the Lips of the Wound, not suffering it to pass into the Cavity of the Ulcer: And thus I dress'd the Wound only with a Pledgit, and a Plaister, and such a Bandage as might keep them on.

The next Day, very little Matter came away; and the Day after that, yet less: The swelling, and Pain of the Thigh were diminished; the large and deep *Sinus* was fill'd up in 4 or 5 Days. Thus the Operation I design'd was prevented, and the Patient cur'd in 10 or 12 Days after.

Reflect. 'Tis no wonder, that very many able Surgeons have been deceiv'd, without perceiving it, in the too frequent use of these fatal Instruments, *Tents* and *Dilaters*; for I who had bid them open defiance, could not keep my self from being mistaken in using 'em, and have experienced their pernicious consequences. Who can imagin that a thing so small as this *Tent* was, could occasion such considerable Accidents?

I was much amaz'd at this Event, and thereby confirmed in my Aversion for *Tents* and *Dilaters*, resolving then to use more Caution

sion than ever, if I shculd at any time be necessitated to use them.

I willingly own, that the Collection of Matter under the Thigh was not occasion'd by the *Tents*: They are not always the cause of Impostumations, nor of the Accidents that follow. But, after all, their Use contributes much to delay the Cure, and to render the Symptoms more obstinate, as may be seen by the preceeding Cure; for after the widening of the Sore, a free passage being given, the Matter would have been discharg'd infallibly, and without Intermission, if it had not been hindered by the *Dilater*; which, how little soever, was yet sufficient to obstruct its passage.

I hope then I shall not be thought to have acted without Ground, in doing my endeavour to put down the use of *Tents*, since it is attended with such pernicious Consequences. 'Tis easy to judge, that if a little *Dilater*, about the bigness of a middle-siz'd Bean, was able to occasion such troublesome Symptoms, a long and thick one must have caus'd much more Irritation and Disorder. If I had continued to use that extraneous Body yet eight Days longer, it would have brought on a new Mortification, which at that time might have laid the Patient in his Grave, considering the deplorable Estate he was reduc'd to by his former Disorders.

CHAP. XXIX.

Of another Hurt in the Leg.

§. 28. IN that same Year, when I was in the Hospital of *Brianson*, there was brought thither a Soldier of the Colonel's Company in *Catinat's* Regiment of Foot, who had both the *Bones* of his *left Leg* broken, together with a *Wound* two Fingers breadth before the Garter: This Accident befel him upon the Works of the 'foresaid City,

The lower part of the *Tibia* came out at the *Wound*, and pass'd over its upper part two Fingers breadth; wherefore we were necessitated to make a vigorous Extension, because we could put all things in their right place: We joyn'd the Lips of the *Wound*, & dress'd with Pledgets only, having made Embrocation, to dissolve a very considerable Bruise, to which we apply'd our *Diapalma* solv'd: Two or three Fingers breadth above the Fracture, we encompass'd the Member with a little Roller, using another in like manner below it; the space between we fill'd with double Compresses dipt in Wine orundy: Under the Leg we us'd a Pastboard, hinder its bending at the Fracture, and over this the Bandage with eighteen Tails: In this, having made all fast with the Juncks,

and their furniture, Diversions were made in due time, and a Course of Diet ordered.

By reason of the Contusion, we were forc'd to dress once a Day, which we did without undoing the Rollers, or giving any trouble to the Member; and when I saw the Bruise, from which I had fear'd some Accidents, begin to be dissipated, he was dress'd but once in 2 days: On the twelfth day we took off the Rollers, that we might streighten them a little; which we did in such a manner, that the Bones remain'd streight and unmov'd. The Wound then had begun to fill up, and there was not the least Exfoliation, nor Separation of any Bone.

The Wound was compleatly cur'd in 19 or 20 days; after which we us'd the Rollers, with Splints and the Juncks upon the place of the Fracture.

The Patient was pretty fortunate in this, that during the Cure he had not felt the least inward disorder, notwithstanding the Unwholsomness of the Beds in the Hospitals of the Army. After 40 days the Juncks were laid aside, and he began to walk with Crutches, and in a Month after he return'd to the Regiment.

Reflex. By this Cure, which was publickly perform'd, it appears, that it is not absolutely necessary to widen the Wound in *complicated Fractures*, as some are of Opinion; for so soon

s it is dilated, the Cavity is fill'd with Mater that slides in between the broken Bones, nd being once there, it is impossible to bring t away, or hinder its stay ; and thus it alters nd rots the Bone which it touches : It dilutes nd depraves its nutritious Juice, mixing with ;, and rendring it unfit for breeding a *Callus*. n fine, it causes Exfoliations and Separations f Bones from the Extremities of the Fracture, nd oftentimes sliding along the Bone upon the *Periosteum*, produces *Abscesses* and *Sinus's*, ery hard to be cur'd.

The Patient is all this time in very great langer, especially in an Hospital, where he s every day tormented once, and often twice, with long and painful Dressing. The part is weakened, and the whole Body wasted away. Besides, 'tis observable that but few Fractures hat are accompany'd with a Wound are ever cur'd in Hospitals, especially when dress'd according to the ordinary Method; and above all, hose of the *Thighs* and *Legs*, which confine the Patient to his Bed, are most seldom cur'd.

Among all the *Ancients* that I have read, I ind none that favours my Method of treating of *complicated Fractures* more than *Fabricius ib Aquapendente*; for in his first Part, Book 4, Chap. 9. and in many other Places of his Works, he is not for dilating such kind of Wounds, but leaves the Separating of Bones to Nature's Conduct: And tho' he expects that

that some Splinters of Bones are to come away, yet he fails not to stitche up the Wound : Fer, says he, *Nature* will never cure a Wound in that place where a Bone is to be excluded ; wherefore we ought to endeavour to heal up such Wounds ; which we shall not be able to effect, unless *Nature* judge it convenient, and find that their remaining open would be unprofitable.

C H A P. XXX.

Of a third Wound in the Leg.

Obs. 29. **O**n the 15th of June 1698, a Mason call'd *la Pierre*, was sent from *Mont Dauphin* to the Hospital at *Briançon*, who labouring on the Fortifications of that Place, had the inner Bone of his right Leg broken about the middle, with a Wound six Fingers breadth long, and two in width. This was one of the most considerable Fractures that had come under our Care in this Hospital, and yet one of those that were soonest cur'd.

After we had reduc'd the Fracture, we joyn'd the Wound, and dress'd it with a good Incarnative : We fomented where it was necessary, and put on the Dressings in the manner above-describ'd ; we perform'd the usual Diversions, and left all untouched for three Days.

ys. We dress'd it a second time after the same manner, letting it alone again other three days: In fine, at the fourth Dressing, that is, on the twelfth Day from the first Dressing, the Wound was quite fill'd up, and more than skin'd over; wherefore straightway, as tly as was possible, we took off the Bandage with eighteen Tails, using instead thereof Splints with light and easy Splints, upon the Stture; and no Accident happen'd during the time. In forty Days space he was able to walk with Crutches, and these he laid aside soon after.

Reflex. This wounded Man was shown as a奇digy to all who came to the *Hospital*. Supposing this Cure had been the only one I had ever perform'd this way, the Success I had then had been sufficient to convince me of Excellency of this *Method*, and to engage to follow it during my Life. But seeing it moreover supported and approv'd by Authors, and confirm'd by many other Cures of like nature, all the pretended Reasons that may be brought against it will prove too weak to overthrow it, and will be slighted by Men of good Sense, and lovers of Truth: and whatsoever may be said in order to censure it, will be so far from lessening its Merit, that it will rather heighten the Esteem thereof.

In

In the last Part of this Work, where I treat of Fractures that are attended with a Wound, I give some Reasons further to justify this way of Practice.

CHAP. XXXI.

Another Case whereby this Way of Dressing complicated Fractures of Legs is confirm'd.

Obs. 30. A Soldier call'd *la Violette*, of the Regiment of *Nevernois*, and Company of *Bonal*, was brought to the King's Hospital settled at the Abby of *Oulx*, on the first of May 1696. He had two Wounds upon the *Os Sincipitii* of the right side, with the Bone uncover'd; all his Face was bruis'd; three of the true or upper Ribs on the same side were forc'd inwards; he had many Bruises on his Body; his right Arm was out of Joyst, and the Hand all torn; both his Legs were broken and shatter'd, the Right one without a Wound, and the Left with one: All which havock was caus'd by a Fall from a very high Rock, near the Barrier of *Fort d'Exille*.

All his Wounds were dress'd but those of his Head, which were not observ'd till the next Day. His Arm was reduced; his right Leg, which was broken about three Fingers breadth above the Ankle, was dress'd with the circular

large ; the left with that of eighteen Tails ;
Ribia was broken to pieces in the middle ;
y of the Splinters were out of their places,
g unloos'd from the Bone at one end, and
ould not be brought together, and alto-
get right in the first Dressing : The Ori-
of the Wound was not large, and we did
lilate it : It bled indifferent much for the
or four first Days, for I let the bleeding
of it self, without using Astringents. I
im Blood many times, both in regard of
Contusions and Fractures, and also because
e forcing in of the Ribs, which occasion'd
at difficulty of Breathing. I caus'd a hole
made in the Straw Bed and Cloathes,
h was sowed round, to afford him the
enency of going to Stool without being
v'd, it being impossible to touch him
out putting him to grievous Torment.
Wounds in the Head were soon heal'd
out any apparent Exfoliation ; the Bruises
is Face were remov'd ; his Ribs were re-
d by means of sticking Plasters ; and the
ulty of Breathing continu'd but for 6 or
ys : The Dislocation of his Arm, and the
nds of his Hand gave us no trouble : The
le Fracture, tho' the Bone was shatter'd,
not follow'd with any Accident : The
and of the compound one was compleatly
d in 8 or 9 Days ; after which we put
Bolsters upon the protuberant pieces of
the

the shatter'd Bone, tying them on with Rollers, which had so good Success; that at the next Dressing no inequality was to be seen. About the fortieth Day after receiving his Fall he was able to stand up with Crutches; and his left Leg, that had the complicated Fracture, was stronger and more clever than the right, that had the simple one only; which was much admir'd by many.

Reflect. This Cure might be of excellent Use to establish the Credit of the former, if there were any need thereof. That which makes it remarkable is, the two Fractures of a different kind in the same Person, one of them being complicated, which yet was soonest cur'd, and the Patient was able to use the Leg wherein it was, before the other. M. *Davijan*, and M. *Micbellet* the King's Physicians in this Hospital, knowing Men, and Persons beyond all Exception, were Witnesses of what I have here related, and know, that I have added nothing but the Truth, and believ'd that this was the first time that a complicated Fracture was dress'd after this manner in this Hospital, tho' it be of a pretty long standing. These same Gentlemen have oftentimes seen Wounds no less confidetable than these, brought by the same Method to a speedy and happy Cure.

I be-

believe indeed, that the strong Constitution of the Patient, conduced much to the Success of the Cure; but it is no less true, that the requisite Diversions were not wanted, whatever might have occasion'd trouble. Accidents was remov'd by this; besides, he was gently treated in dressings, and the Sores were not exasperated, so that in the first Days he felt but a very slight pain. He rested well, and was able to take, much ease, such Food as was proper for

You will very seldom see a wounded Person in so deplorable a Condition as this Man.

All the Parts of his Body were either broken or bruise'd; had but any Accident happened, Death had been unavoidable, and Care in vain; And if the *Dissolvents* and *boresticks* had not unloaded the Parts in promoting the Circulation of the Blood, and purifying the Humors, by a gentle and insensible Transpiration, I doubt the Event had not been so sudden, nor so desirable.

It is well known, that in Practice there is a difference made between Fractures not accompanied with a Wound, and those that in many Places the latter are judg'd insensible; especially those of the lower Extremities, that indispensably oblige the Patient to his Bed.

I don't

I don't question but very many, especially the *Admirers of Antiquity*, will find fault with this *Method*, and reject my *Rules*; but may they charitably oblige the Publick with more easy and more sure *Ways*, and confirm them with *unquestionable Experience*, and I promise them to be among the first that shall embrace their Party.

C H A P. XXXII.

Of the Feet.

Obſ. 31. ON the 25th of June in the same Year 1696, an Irish Gentleman, call'd *John Donoughal*, Nephew to Lieutenant-Colonel *Athlone*, was brought to the Hospital of *Brianson*, having been wounded at an Action in the Valley of *Barcelonetta*. He was shot into the right Foot, and the Bullet entring on the upper and foremost part of the *Metatarsus* towards the fide, was lodg'd between two Bones of the same Part.

A Surgeon upon the Spot did whatever he could to draw out the Bullet by the same way it entred, but his Endeavours prov'd fruitless.

The first Day that I dress'd it, after I had consider'd the Wound, and observ'd the Way of the Bullet, I found it could not be got out, unless a *Counter-Opening* were made; which

accordingly was done, at the middle and hinder part of the *Metatarsus*, and the Bullet was drawn out with very little Pain.

The Wounds were dress'd according to our Method, with Embrocations over all the Part: Diversions were not omitted, and he was dress'd but once a Day with our simple Remedies and the Plaster of dissolv'd *Diapalma*.

The *Escar* being separated, no great Suppuration ensu'd; no Bones came away, at least that we could observe: Henceforth he was dress'd but every other Day, and was cur'd in thirty Days, or thereabouts, after which time he return'd on foot to his Regiment.

Reflect. 'Tis almost universally known, that *Wounds of the Extremities*, accompany'd with a *Fracture*, are tedious and trouble-som to be cur'd: The *Tendons* and *Nerves* that here abound make these Parts of a quick Sense, and render the Wounds therein obnoxious to grievous Accidents; and therefore it is that they require to be dress'd with much *Gentleness*, and *Remedies* particularly suited to 'em. I have elsewhere remark'd, that *Tents* and *putrifying Medicines* are extreamly hurtful to *Nervous* and *Tendonous* Parts, wherefore I shall speak no more of them. I shall only here take notice, that some prepossest Persons have had the confidence to say, that this *Way* of Dressing, so *gentle* and so *easy*, has something of Rashness in

in it ; that it is very dangerous to omit the Circumstances observ'd by the Ancients ; that their Rules were not laid down without good Reason ; and that their Method, in fine, ought to be put in Practice among the Soldiers. Though *Reason* and *Experience* are both on my side, yet I am ready further to maintain, that this Method has nothing of *Temerity* in it, in regard it follows the Footsteps of *Nature*, which ought ever to be our Guide in the curing of Wounds. We can never go astray if we follow her Conduct ; and if we swerve from her Paths, we can't but fall headlong into Dangers.

Besides, it is no less necessary to be an able Surgeon, and expert in Practice, in order to manage a Cure according to this Method, than appears so easie, rather than use the common way of Practice, which is full of so many Circumstances that are ever unprofitable, and oftentimes pernicious. And we may reasonably presume, if our *Method* has been so successful, when practis'd on Soldiers dieted and dress'd in an Hospital where the *Air* is oftentimes infected, that it will be much more so when used towards Patients that have all the Conveniences of *Life*, and who breath in a pure *Air*.

CHAP. XXXIII.

Of the Feet.

12. When I was at *Lucerne*, in the Year 1688, a Soldier of the red Bands, was brought to the Hospital, who had receiv'd a shot in his right Buller, which was of a very small Size, enter'd at the inward and middle part of the Toe, and came out at the end of the Toe, no Excoriation appearing either above or below.

The first and second Bones of the great Toe broken, the second of the three next entirely crush'd to pieces, and the last the little Toe in like manner.

When we parted the Toes one from another a great many little pieces of Bones were seen; which seem'd only to hang by a thread. I first set to rights every Bone by itself, and afterward set them in order one another: Between every Toe and its fellow I gently slipt in a little piece of Linnen in *Spirit of Wine*; and I made small compresses pretty large and longish, which I lay above and under the Toes, in form of caps, being wet also with *Spirit of Wine*: I sapt all up in Linnen, without Oynments or

or Plasters, and supported the Foot with a Sole, sustaining all with an easie Bandage.

I took off the Dressings after 2 Days, and without removing the little pieces of Linnen between the Toes, I fomented all the part with Spirit of Wine; and dress'd it as before: the Suppuration was but very small; and indeed it was with design to prevent it, that I us'd nothing but the Spirit of Wine, which was the only Remedy I employ'd to compleat the Cure: This was effected in about three Weeks time, without the coming away of the least bit of the Bones, tho' they had been entirely shatter'd to pieces.

Reflect. All Experience assures us, that 'tis Nature and a good Method that effects the Cure, and not at all either the great Labour, or vast Charges bestow'd upon it. If I had used in this Case the ordinary Oyntments and putrefying Medicines, they would have occasion'd a plentiful Suppuration, whereby the Splinters of the Bones had been losen'd and brought away, the Cure had been delay'd, and possibly the Toes lost; which had been enough to render the Patient lame for his Life.

Tho' this Cure is not of great Consequence, yet the Conduct therein us'd may suffice to shew, that the Bones do easily enough re-unite, when they enjoy the necessary Repose, when the Air has no time to alter them, or to exert its

Efficacy in the Wound, and when the use of purrative Remedies is laid aside, which were hurtful, as has been above observ'd : I will here add, as to the last-mention'd cures, I know no kind of Wound, in part of the Body soever, that does ably stand in need of them.

ut lest I should weary my Reader with fitable Repetitions, I shall content myself with having describ'd the two preceding s of *Wounds in the Feet*; tho' in this Ho! we have had a great number of these pass thro' our Hands, that have had a happy and comfortable Event.

CHAP. XXXIV.

The Conclusion of the Second Part.

ny weak Reasonings, and the Authorities have adduc'd, together with the Expenses, which I have faithfully related, should prove sufficient to convince some Persons the Excellency of my Method, I have only Request to make, to such as shall with their Approbation, which is, that they d make a Tryal thereof themselves.

ould have recited a very great number of s, like unto these contain'd in this 2d Part: Ild have describ'd the Cures I have perform'd on wounded Persons in my Travels, or in

in the *Army*, where Occasions of this nature daily present themselves, because of the Actions that ordinarily fall out; such are those of the Valley of *Barcelonetta*, and the Battle of *Marsella*, fought Oct. 4. 1693. But this would have been, for the most part, to say the same things over and over again, all these Cures being manag'd almost after the same way.

I suppose, it will be easily enough believ'd, that I could have enlarg'd the bulk of this Volume with many other Observations, considering it is Truth, that in 4 Years time, that I have been in this Place, more than 3 Thousand Persons have gone from it compleatly cur'd.

Some there are, who, not able to discover the genuin Cause of the desirable Success, that has attended the Cures, done in this Hospital; and willing to blast the Reputation of a *Method*, to which only they were owing; have attributed all to *Chance*, and have given out that we have been accompanied with an extraordinary *Good Fortune*: as if forsooth, the curing of Wounds were like a Game at *Cards*, or throwing of *Dice*; or as if blind Chance had any thing to do where Experience and good Conduct are so indispensably necessary.

I have hitherto only treated of such Wounds as were very considerable, and were almost all somewhat complicated: From whence I hope it will be believ'd, that simple Wounds, where-with I was unwilling to fill up this Part, were cur'd

ir'd after this Method, with much more Speed
id Ease than those here related.

It may possibly be thought strange, that (in
ures of single Centinels, describ'd in this 2d
urt) I have declar'd I us'd, on different Oc-
casions, the *Balsam of Peru*; which is scarcely
ovable, considering the Place, and Condi-
on of the Persons. This I own, and do ne-
rtheless aver, that I have said nothing but
ruth: But when it is consider'd, that the
uke of Savoy sent his Apothecary to *Lucerne*,
ith Orders to supply himself from thence
ith whatever was most precious, and to fur-
ish a compleat Shop of Medicines, for the
ospital of that Place, what I have said will
asily be believ'd, since not only that Reme-
y, but also *Pearls*, *Bezoar*, and the most
ostly Cordials, were bought up, and us'd
eely without distinction.

The Hospital-Surgeon.

P A R T III.

Exhibiting a general View of the Author's new Way of Practice, not only with respect to Wounds, but in other Cases belonging to Surgery; and a Description of the simple Remedies he uses: With some Observations.

C H A P. I.

The Design of this Part, and what it contains.

Altho' in the preceeding Parts of this Book, where I declare the *Advantages* and *Excellency* of this *Way*, confirming the same by *Reason*, *Authority*, and manifold *Experiences*, I have sufficiently made known my *Practice*, with Relation to *Wounds*; yet considering it is there deliver'd without any Method, and with frequent Interruptions, as being interwoven with my Reasonings and Observations, I shall, for the Ease and Advantage of my Reader, but especially of the young Surgeon, in this 3d Part, give a general *Prospett*, as it were at once, of all the Parts of my Practice; and that not only in what concerns *Wounds*, to which I principally confin'd *my self* in the two former Parts, but also in *other Cases*, that fall under the Surgeon's Care. I will likewise here, ingenuously, and with-
out

rve, give a Description of the *simple Remedies* which I have us'd as well in of *Wounds* as in that of other *Diseases* come within the Jurisdiction of Surgeons; happy and comfortable Effects that I frequently seen produc'd by them is in my Opinion, to recommend them to the esteem and Use of the wise and understanding Artist, who candidly designs the welfare of his fellow Creatures as fly or *at Refuge* in their Distress.

As I will as I go along deliver some *Observations* very instructive and useful, to illustrate and confirm the Subjects, for the sake whereof they are inserted: To which, when *Reflections* shall be subjoyn'd, I shall add *Tumors* and *Abscesses*.

CHAP. II.

of Tumors and Abscesses.

Mieur Bertrand, a Physician of Marly, in his *New Reflections upon Acidis*, gives, in few Words, a very clear and distinct Notion of the Nature of *Tumors*. As I am confin'd, by my proposed Design, to declare my Practice with respect to those who desire to search into their Nature, and examine their Differences, I must refer the Reader to such Authors as have written upon 'em. The *Authors* of former *Editions* are not well agreed with the

Ancients in this Matter ; for since the C-
tion of the Blood has been found out, t
Causes of many Accidents, that fall ou
Cure of Tumors, have been discover'd,
the Ancients explain'd in a manner
ther different.

Now in regard a Disease, after its :
is understood, is easy to be cur'd, if o
but a little Application of Mind, the
Surgeon will do well to search into th
ses of Tumors, in the Works of the M
where he will likewise find suitable Rei
Etimullerus, in his *Medicinal Surgery*, do
a great number of very proper Med
as also M. Verduc in his Book call'd *P
gie de Chirurgie*.

This only I will say by the by ; t
Tumors that are accompanied with Infl
tion, such as a *Phlegmon*, and an *Er
hane* more need of *Dissolving* than *Repe
Medicines* : I was confirm'd by Experi
this Opinion, and the Truth thereof
Day is not doubted ; tho' at the same
is contrary to the Rules of the Ancient
a *Phlegmon* proceeding from an i
Cause, according to the Moderns, is t
else but an Obstruction of the Vessel
that from an external Cause may be a
ted of the same Nature. This Accide
very commonly happen in *Gunsbor-* under
which Head we shall take
of it.

ding to these Principles, *Resolvents* are
lately necessary, in order to answer
Intention, which is to dissolve or cau-
pore the accumulated Humor.

Erysipelas, or St. Anthony's Fire, according
to these same Moderns, is caus'd by a sub-
tropical Acid, diffus'd over the Skin, or
cles : *Dissolving Medicines* are also pro-
nis Disease : So that *Spirit of Wine* pre-
'th *Camphire*, the *Sugar of Lead*, or
Inegar, may be us'd.

Accidents that follow upon a great
as, are frightful and violent. I remem-
at when I was at *Lucerne*, a certain
who had a *Fever*, was seiz'd with a like
ver ; it reach'd from the middle of the
o the *Heel* ; he was not so wise, as to
notice of it in time, but kept the whole
it of the Bed for a whole Night, in a
cold Season ; which caus'd such a Re-
ion, that on the Morrow all the Part
ngren'd, and all our Care and Diligence
not prevent its entire Mortification ; for
ry little time the *Gangrene* turn'd to a
us. Before he dy'd, one half of his
was entirely corrupted and putrify'd : I
aw so dreadful a Sight, or smelt so in-
ole a Smell : For not only the Hospital,
en the whole City was in danger of be-
ected thereby, when he was yet alive..
en an *Erysipelas* will not yield to dissol-
medies, we ought without delay to

have recourse to *Scarification* of part, to give a passage to the moreover, we should foment the with *Spirit of Wine* prepar'd with some other Spirituous and pierc *Vinegar* wherein *Sal-Armoniac* is commen *Salt* when that is wántin be us'd. But after all, it is not to that Repelling Medicines are a be laid aside; only 'tis fit we ki use them on suitable Occasions.

In the Year 1693, M. *Dechamp*, mander of the 3d Battalion of *Sau* Lieutenant-Colonel of the same having an *Erysipelus* in his Leg, ha ted with the *Dissolving Remedy* by the Moderns, for 3 Weeks tin perceiving any Advantage theret upon he caus'd himself to be bro Town, that he might be under my being inform'd by him of what Re been us'd, I thought fit to apply R and in 8 Days after, he departed en In order to a prudent Use of Re *Age*, and the *Constitution* of the 1 *Season* of the Year, and the *Nature* affected are duly to be consider'd, not insist further upon generals.

Now as for *Abscesses* of all sorts, come under our Hands in this Ho have been cur'd with an *Expeditio* appear incredible, I will only say

ing it sufficient to maké a large opening item, I left the rest to the sage conduct *Nature*; not forgetting however general Remedies, and the ordering of *Diet*. But for the dressing of the *Ulcer*, I only us'd a le *Pledgit*, cover'd with the most common Medicines; and sometimes in case of a cavity, small Compresses for expelling the *soor*, with a Plaister, and a Bandage sufficient to keep it on.

The great number of those who have been cured, in this Hospital, according to this method, and cur'd in a very small time, is beyond Belief.

When the *Orifice* is not stopt up with an *aneous Body*, 'tis evident that the *Matter* make no Stay in the Parts, but will come away without Intermission; and the Parts, were thereby kept at some distance from another, come together, and at the same time do expel whatever may there be contain'd; leave no empty Space for the Collection of what is useless and inconvenient: once the Parts are united, *Nature* acts at Freedom, whose Balsam generates Flesh faster than all the Remedies in *Pharmacy*.

I hope I may presume, that none will think it could have continued in the Use of this *bod*, for so long time, had I not experienc'd desirable Effects, on a thousand Occasions: I could safely take my *Oath*, that never the least Accident happen'd to any of

those who were dress'd after this man.
Every one may believe as he thinks good
what I say; but I dare aver, that I am more
careful that what I say should be true
than that it should be Periwigative.

As for *Scrophulous Tumors*, or a *Bronchial*
I have not found any Remedy so successfull
Mercury; and I believe, in the Opinion I
of it, I am not singular; the many Experi-
ences I have had thereof, make me to value
much. He that well understands the *Cause*
Nature of these Evils, and withal the *Value*
and *Uses* of the Remedy whereof I speak,
agree with me, that this only can effect a
perfect Cure: But all consists in the discreet
use of it. The best of Remedies, and the
exquisite Instruments, are ever dangerous
when manage'd by Surgeons that are void
of Knowledge and Experience. I may posse
one Day, make known to the Publick
way which I have successfully us'd, to
to a perfect Cure a great number of
Maladies as I now speak of, and those
most obstinate and inveterate of their kin-

CHAP. III.

Of a Gangrene.

A *Gangrene* is an Accident that occa-
very much Trouble in the *Hospitals*
the Army. I shall say nothing of its Ca-

bevenot has fully treated of this Matter ; M. Causape, in his Book of Fevers, has a brief Discourse of it upon different Principles. Young Surgeons may betake selves to the reading of them, for their ictions herein.

omitting this, I say, that here we have me to lose, but must immediately appur selves to stop its Progress, and to a- the fatal Consequences. When the great ls are thereby entirely intercepted, in a ber that may be cut off, the best way come speedily to Operation, without atng a Sphacelus ; for the Gangrene goes on ifly in a small time, that the sound Parts ssaulted before ever we can well know we are a doing.

Gangrene often happens in Gunshot-
uds, if it is not prevented ; as also in Bru-
in Wounds made by cutting, or bruising-
ments ; and also after a great Phlegmon,
Erysipelas ; and sometimes by an Extre-
of Cold : This last kind is very frequent
the end of Campaigns : The Remedy
d was *Spirit of Nitre*, or *Aqua fur:is*,
ein Crude *Mercury* to half the quantity
solv'd : With this we have easily enough
Mortifications in the Feet or Hands, ap-
g over all the Extent of the Gangrene a
piece of Linnen wet in this Liquor : And
this can't be had, other *Spirits* may be
hat are much of the same Quality.

This Remedy I have found to be
and so quick in its Operation,
use any other, in any sort of Gangrene
mirably well separates what is dead
is alive, without scarifying or cutting
when the Mischief lies very deep,
violent Remedies are absolutely necessary.

Cordials and Wine ought never
to be used in such Cases, to fortify and
natural Heat from an Enemy
times assaults it in its very Principle.
the Body is plethorick, *Bleedings*
are no small Help. In the beginning
grene, to *Topical Remedies* Divers
added, without forgetting to observe
of Diet, which also demands due
Care. So soon as I have discovered
sition to *Mortification*, I have soon
Cataplasms, and *Emplasticks* when
mation would allow, to recall the
to give *Nature* Time and Strength
add to overcome, by the force
concentrated, the Matter already
with a malignant Quality, or just
come such; and I have often seen
of Maladies end happily in an
alaudable Concoction.

When a *Phlegm* that ensues upon
is violent and obstinate, and will
Diversions and *dissolving Medicines*
without delay scarify the Part, till
Tumor reaches, to give an Outlet.

hat is extravasated, and oftentimes corrupted, and to discharge and relieve the Part, hat otherwise might be suffocated by the Fulness and Obstruction, bathing it afterwards with *Spirit of Wine* and *Sal-Armoniac*: For if we be remiss in our Care, the Enemy that is conceal'd within is privately at work ; and when the outward Signs of the Gangrene appear, all that is under the Teguments is often found corrupted, and an irremediable disorder.

An *Erysipelas* is yet more formidable ; for it is more sudden, and more nimble in its Operation : It is the part of a prudent Surgeon to take heed of it in time. A Fomentation with *Spirit of Wine*, *Unguentum Egyptiacum* and *Sal-Armoniac*, may be us'd.

Many Authors have describ'd a great number of Remedies very proper in the Cure of *Gangrenes*, but in the Hospitals of the Army there is not always the conveniency of making a Choice ; wherefore it is good to know how to use such as are simple, and easie to be found : Besides, 'tis not always the most pompous Compositions that are of the greatest Efficacy.

In this sort of Distempers, it is very necessary to make use of inward Remedies, as well as Topical ones ; such as strong *Cordials*, *Venice Treacle*, *Confection of Hyacintb* and *Alkermes*, and *Alexipharmicks*, to which a little *Camphire* may be added. *Wine* ought to be number'd amongst the *Cordials*; it is one of these

these which I very frequently use in Hospitals. Scordium taken inwardly, and apply'd outwardly upon the Gangrene, is a Remedy not to be despis'd.

A great many Remedies, very proper for a Gangrene, may be seen in *Etmullerus*: He has also given an account of the way us'd by the Germans, to separate the mortify'd from the sound Parts, which is done with the Butter of Antimony: This is the Remedy they use in the Amputation of Members, to avoid the use of the dismembering Knife, and of Astringents that burn and cauterize.

This Remedy might be us'd with the same Success as the Spirit of Nitre, which I have spoken of before; there is no Difference but what is gradual: But whether the one or other be us'd to stop a Gangrene, a simple Digestive will afterward be sufficient to hasten the falling of the Escar, and finish the Cure.

C H A P. IV.

Of Ruptures.

Ruptures are very frequent among the Soldiers. The Toil they undergo, and their Manner of Life do equally contribute to bring them to that miserable Condition, by reason of which there is often a necessity to send them to Hospitals.

MS.

My design in this place, is only to give an account of the way I use to help this sort of *Distemper*; for I am convinc'd, and no body doubts of it, that a *Truss* is the most sure and most infallible Remedy to hinder the Falling down of the *Guts*: But, as there is no Convenience for the making of them in Hospitals, so Accidents must be quickly provided for, that comes oftentimes all of a sudden; such as the Descent of the *Intestines* into the *Scrotum*; for the Pains are then extreamly violent, and so grievous that they resemble those of the *Passione Iliaca*.

Wherefore on such an Occasion I apply a *Cataplasm* of *Ox-Dung*; or else when I may have it so, I use it fry'd in *Oil of Hempseed*, or in that of *Violets*. This Remedy eases the Pain, by dispelling the Wind, and so gives Liberty to restore the Gut into its place, provided the *Intestine* is without Excrementitious Matter in it. *Astringents* of the first Rank may also be us'd, as common *Bole*, &c. mix'd with the *Glair* or *White* of an Egg, or *Vinegar*. Some use *Emollients*, but this Operation is too slow in a case requiring such haste.

I have often found much advantage from a *Fomentation* made up of *Pomegranate Flowers*, *Nut-Galls*, *Cypress Nuts*, *Pomegranate-Rind*, *Allam*, *Camomil* and *Melilot Flowers*, with *common Salt*, all bruised and beaten, and boil'd in *Fog-water*, or in rough harsh *Wine*; I use it very warm altogether, without straining
the

the Liquor : With this Remedy I have restored Patients who seem'd to be upon the very brink of Death. Moreover, the *Emplastrum pro Hænia* ought to be apply'd upon the Dilatation of the *Peritoneum*; but without a *Truss* the best of all Remedies will do no great Feats.

C H A P. V.

Of Wounds.

I Have sufficiently explained my *Method* as to what concerns *Wounds*, in the Account of Cures contain'd in my second Part. My Design is here (for Reasons mentioned at the beginning of this Part) to entertain my Reader with a General and Comprehensive Idea of my *Way of Practice*, that may quadrate to all the different sorts of Wounds that occur.

Perhaps this *Method* may seem to swerve a little from that of the *Ancientes*, or may not agree so much with that in use amongst the most part of the *Moderns*, as some could desire : But I would entreat those who shall read this *Treatise*, not to condemn it before they have thoroughly examin'd the Truth of the Matters of Fact, and the Reasonableness of the *Rules* therein laid down ; for our usual Rashness in judging of what we don't altogether understand, is often the Cause of our *Error* : However, I am in good Hopes, that e're it be long

this

this *Way* will be acknowledg'd to be the Product of Experience; and its *Evidence* to be an infallible Mark of its *Truth*.

Besides, I dare confidently affirm, that this *Method*, howsoever new it may appear to many, ought not to be number'd among those things that are more *curious* than *profitable*. *Reason* speaks for it; putting it beyond all doubt: and about three thousand wounded Persons happily cur'd by it may warrant any one in the Use of it. In the first and second Part of this Work, I explain at length the *Reasons* that justify my Practice, and support them with several *Authorities* both of the Ancients and Moderns.

If I condemn *Tents* as Instruments unprofitable and destructive, 'twas *Experience* that convinc'd me of their Mischief; and I hope, henceforward very many Surgeons will range themselves on my side.

If I recommend, in a special manner, a *Gentle* and *Speedy Way* of Dressing, I must herein be justify'd by all Men of sound Understanding: And indeed I don't question, but every reasonable Person, after he has been rightly inform'd, will sufficiently approve what I have advanc'd in this Matter.

To conclude, in asserting that the *Air* is *burtful* to Wounds, I have said nothing but what *Hippocrates*, *Galen*, and many others were sufficiently convinc'd of. 'Tis known to all, that the *cold piercing Air* is very pernicious

ous to our *Nature* : On this I have enlarg'd a little, in the seventh Chapter of the first Part, according to that little Measure of *Understanding* wherewith I am endow'd.

I suppress *frequent Dressing*, that *Nature* may be allowed time to act, and to restore the wounded Parts to their first Condition ; which she can't do when she is so often interrupted in her *Work*.

I have ever observ'd this as a general *Rule*, to dilate by *Incision* Gun-shot *Wounds* at the first Dressing ; as also all other *penetrating Wounds*, and such as have a *narrow Orifice* : This is the true Way to keep off, and to avoid the most part of Accidents that happen in Practice ; and to prevent being reproach'd, when any troublesome Symptom falls out, I sometimes use *Dilatets* in the first Dressing, to hinder the Union of the new Incisions, to keep their Brims asunder, and to leave an open Passage for Matter, or any thing else to come away, when *Nature* shall be dispos'd to expel 'em ; otherwise I use them not, lest I should hinder the closing up of the *Wound*.

When the *Bleeding* is obstinate, I use calci'd *Vitriol*, *astringent Powders*, *Powder of dry'd Vine*, *Syptick-waters*, &c. 'Tis only in desperate Cases that I have recourse to *Roman Vitriol*, *Aqua fortis*, and the *actual Cautery*.

I have ever, in the first Dressings, found much Advantage from *Defensives*, which I apply'd above, and sometimes below the *Wound*,

to allay the *Heat* of the *Blood*, to moderate its *Activity*, and resist *Fluxions*; observing always to make them somewhat *Emplastick*.

I make the Diversions without loss of time, with intent to correct the univerial Fulness, facilitate Circulation, and lessen the abundance of Blood that might fall in upon the Parts affected; and one or two Bleedings at first are of more use than four after the Accidents or disorderly Symptoms appear.

I am always careful to empty the lower Belly by *Clysters*, having found that the retaining of the *Excrements* is always a mighty hindrance to the good *Disposition* of the Body.

When the *Bleeding* is great, I don't take off the first *Dressings* till the second or third day after they are apply'd, that the wounded Vessels may have time to unite; and provided the *Season*, and the *Pain*, or other *Accidents* don't hinder, I every day take off the Rollers during that time; and leaving only that which supports and keeps on the *Astringents*, I make *Embrocations* when needful, and renew the *Defensives*. By this means I often avoid the *Suffocation* that may happen, if the *Astringent* and *Emplastick* Medicines are too long kept on the Parts, which by stopping up the *Pores* of the Skin, and retaining the *Vapours* that ought perpetually to pass thro' 'em, are the Occasion of many very grievous Accidents that happen to Wounds. Too great a quantity of Bands and Compresses has often the same Effect.

I use

I use only *Pledgets* after the first, and sometimes after the second Dressing ; and continue the *Embrocations* till the *Contusion* is dissolv'd, which may be in five or six Days more or less, according to the Bigness and Condition of it, or to the Nature of the *affected Part*.

When a *Phlegmon*, or an *Erysipelas*, &c. happens to a Wound, I avoid the Use of *Uncutus Things*, which are hurtful here ; employing only such *Cataplasms* as are proper for easing Pain, and sometimes also dissolving Medicines, which together with *Diversions*, and a proper Course of *Diet*, resist and overcome these Accidents.

I find it very profitable, when I dress the Wound, to cover it with a *Linnen Cloth* wet with warm *Wine* or *Brandy*, immediately after I have taken off the Dressings : This defends, strengthens, quickens, and unites the *Spirits*, and hinders the Particles of the *Air*, and the *Effluvia* therein, to stick to the Wounds, or pass to their Bottom.

After the first Dressing is over, I never search the Wound either with my *Finger* or *Probe*, unless there is an absolute Necessity for it. I also disallow the use of *dry Tents*, so commonly employ'd for drying up the Matter from the very Bottom of Wounds ; and generally every Thing that may irritate, or occasion *Pain*, or may oppose the design of *Nature*, which is the healing up of the Wound.

I don't,

I don't, as some do, take up a deal of time in striving exactly to empty the *Wound* of all the *Matter* that is in it ; but as quickly as can be, I apply the *Dressings*, to hinder, as hath been said, the Action of the acid Parts of the *Air*, and the *Dissipation* of the *Spirits*, that the Strength of the afflicted Parts may be preserv'd as much as possible ; which is very requisite, in order to enable them to bear up against the many Evils wherewith they are assaulted on all Hands.

When I say in the fifth Chapter of the first Part, that the *Matter* ought not to be retain'd in *Wounds* ; and that *Nature* would not be at such Pains to drive it out, if she could have any Advantage by its stay ; this is to be understand of such Matter as is kept in by means of *Tents*, which becomes hot, and ferments, and by its abode acquires an evil Quality, and might be suck'd up by the *Veins* ; for that which is laudable is hurtful only by Accident, being of its own Nature Balsamick, because it is ever mixed with good store of the *Natural Balsam*, or *Nutritious Juice*, which without Interruption flows into the wounded Parts. What I say is confirm'd by that which is done in some places in *Holland*, whereof the laudable *Matter* that runs from *Wounds*, they make a *Balsam* that is of great Use in their Cure.

It is not at all improbable that the *Sound Matter* that comes from *Wounds* may promote their *Cure*, when by the *Hand* and *Diligence*

ligence of a skilful Artist it is purify'd and separated from its Excrementitious Parts; for what remains is only the *Balsam* of the *Blood*. This will be more easily conceiv'd by those that consider, that there are some learned and ingenious *Italians*, who cure the *Blody-Flux* with a *Salt* drawn from the Excrements of the Patient; and also such as have a *Dropsey*, with the *Salt* of the Waters that are drawn from their Belly. *Etmullerus* also very much commends the *Exrement of the Ears* for curing Wounds.

All these things contain less balsamick Juice than the *Matter* that runs from Wounds, when it is not altered by the *Heat* of an *Essential* or *Symptomatick Fever*, when it has not remain'd long in the Wound, as being detain'd there by *Tents*, &c. or in fine, when it is not deprav'd by the use of *purifying Medicines*, or others of a like sort, that destroy its natural Temperament.

M. Verduc, Tom. I. Page 440, speaks very patly to this Purpose, when he says, that *Matter* is the *Chylous Part* of the *Blood*: Wherefore it is against all manner of Reason that some Moderns require that the Wound be accurately wip'd dry, seeing thereby it is depriv'd of that which only can effect the Cure.

When I know, or am in doubt, that there is some *Extraneous Body* in a Wound, which *Nature* would exclude by the *Orifice*, or that any *Splinter* is separated from a Bone, without ha-

ving

ving to do with *Tents*, I sufficiently dilate the Wound with *Prepared Sponge*, or the *Pith of Elder*, or *Gentian Root* fitted for that purpose, that a free Passage may be given to any thing that must come away : This way is understood by every Surgeon, and there is no Difficulty therein, provided one be careful to use it *seasonably*.

I can't restrain my self from highly blaming those who very patiently marshal up in order a great number of *Dossils* or *Dilatets*, of which they make three or four *Lays* for Wounds that are any thing large, observing a certain Symmetry and Proportion, which exposes to the View of Assistants a Method no less pernicious than contrary to *Common Sense* and *Reason*. As for the *Decency* and *Seemliness* which adorn and set off that Way, it will be no less conspicuous in making large Pledgits of long and pretty fine Lint, that may at once reach over all the Extent of the Wound.

I my self have experienc'd what a fond Opinion is commonly entertain'd of that *Cruel Method*; for the greatest part of wounded Persons believe themselves *neglected*, if an *Hour* is not spent in *searching* their Wounds, and as much in *applying* the Dressings; but *Charity obliges us to free them from their Error*.

When a *Wound* is deep with much loss of *Substance*, I fill it only with *Pledgits* of fine Lint; left leaving an empty Space, it should be fill'd up with *Air*: I apply them very *slightl*

slightly cover'd, or moistned with some Medicine agreeable to the Nature and Quality of the Wound : These are not so hard as *Dossils*, and consequently occasion less Pain, and don't so much oppose the closing up of the Wound, being not so compact as to hinder the breeding of Flesh ; neither are they so apt as *Tents* to be lost in the Wound, or fix'd in some corner of its Cavity.

I am no less careful to suppress *Injections* as well as *Tents*, having observ'd their Effects to be no less pernicious ; for they *liquify* and *disolve* the *Blood*, *enlarge* the *Wound*, cause *Pain*, and make *proud Flesh* to grow.

I disallow the Use of *Aromatick Wines* in Dressing; as also of Fomentations, which are frequently us'd by some, and contribute very much to the protracting of the Cure.

'Tis very sure that these Parts drink up the *Moisture* which softens, relaxates, and puffs up the *Skin*, and passing through it, fills them like Sponges ; the *Natural Heat* of the afflicted Parts is thereby suffocated and extinguisht'd, no perfect *Concoction* can be perform'd, but all is turn'd to *Matter* and *Corruption* : And if this *Method* is long continu'd, as it too often falls out, the *Ligaments* are relax'd, and the Patient is in Danger of being lame for all the rest of his Life.

This way of Practice is in a particular manner pernicious in *Hospitals* of the *Army*, where that which is necessary to give Remedies to
all

all the required Qualities is not always to be had : For Instance, how can they be kept warm, without a sufficient number of Cloathes to preserve the Patient from the Cold ? Hence it is that in a moment after Application all the Dressing becomes cold and frozen, which occasions *Oedema's* very hard to be cur'd, and oftentimes Symptoms that are yet more troublesome.

A right Course of *Diet* is so necessary in the curing of Wounds, that without it an infinite number of *Accidents* cannot be prevented : But it is necessary to have respect to the *Age* and *Constitution* of the Patient, to his *Habit of Body*, to the *Season of the Year*, and the *Nature of the Wound*.

'Tis to be observ'd, that a very strict Diet is a mighty hindrance to the Cure of Wounds in Soldiers, who ordinarily feel more of the Inconveniences of a too scanty, than those of a too plentiful Table. Wherefore, I don't altogether deprive 'em of the use of substantial solid Food, unless when Necessity requires otherwise, for this keeps up their *Strength* : For Broths, tho' good, are not so nourishing in *Hospitals*, as to be sufficient of themselves for Food ; and at the same time this is no prejudice to the necessary *Diversions*. *Wine* also a little allay'd ought not to be kept from them, unless in some very important Cases : It resists the ill-Quality and Malignity of the *Air*, which is always impure in *Hospitals*; and, in a Word,

Word, *Wine* is their *Cordial* and *Counterpoison*.

It is likewise very necessary, especially in *Hospitals of the Army*, to have regard to the *Situation of the wounded Part*, which ought to be such, as to give *Liberty* to the *Circulation of the Blood*, a *Descent* to the *Matter*, and *Ease* to the Patient; I have known the neglect of this Point occasion very troublesome Symptoms.

If a *Surgeon* is not so charitable as to give Instructions to those that attend the wounded, how to make their Beds suitable to the *Quality* and *Nature* of their Wounds, the miserable Patients are ever in Pain by the inconvenient Position; which is enough of it self to deprive them of the Rest that is so necessary for 'em, and to render their Sufferings numerous, and our Cares to no purpose.

The *Head* ought to be plac'd indifferent high, and laid upon something that's soft, without Feathers, if it may be had, with a *Descent* to promote the Discharge of the Matter: When the *Neck* is wounded, it must be in a manner slightly supported by the *Pillow*: Or by Linnen folded into several Doubles, we must fill up the empty Space between the Head and Shoulders.

Wounds of the *Breast* require an easie and unstrain'd Posture, rather high than low. But in this we must have most regard to the Convenience of the wounded Person.

Those of the *lower Belly* and *Loins* demand almost the same Situation: To those of the Bladder

'der and *Genital Parts*, an undisturb'd Rest, a convenient Bandage, which is a *Suspension*, and a Position somewhat raised, are very ful.

very body knows that the *Arm*, when tended, must be supported by a *Sling* that s over the Neck ; and that in Wounds and Fractures of the *Shoulder-Bone*, a Pillow is necessary to keep it almost as high as the Breast, which posture it is most at ease : In Wounds or Fractures of the *Wrist*, *Metacarpus* and *Fingers*, we must keep the Hand extended a piece of Board.

Wounds of the *Thighs* require that the Member be plac'd stright, neither too high nor too low. Those of the *Legs* and *Feet* do ssarily demand that the Part be something , that so the courser Blood may freely circulate; for otherwise, the Blood by its weight will be stopt in the Veins, and corrupted ; and thus the Circulation being impeded, many grievous Accidents would ensue.

This hanging, or low Position of the Limbs, being minded by many Surgeons

supposing the Leg had been kept bent, when under Cure of a *complicated* or *simple* Fracture. This is what I have often observ'd, and to which young Surgeons would do well to take heed. Fractures of the *Tibia* and *Fibula*, and simple Wounds in the Legs, if any thing considerable stand in need of a Sole to sustain the Foot, as well as those of the *Tarsus*, *Metatarsus*, and *Toes*.

Too streight Bandage, especially in *Gunshot-Wounds*, occasions troublsom Accidents; it hinders the Circulation, and frequently causes Mortifications: Wherefore I use only such as may keep on the Dressings, especially the first day. Many have been brought wounded to this *Hospital*, with the Parts half-gangren'd, by too tight tying; for in *Gunshot-Wounds* the wounded Members swell always, some more some less, whereby the Bandage, tho' but moderately streight, becomes intolerable before the next Dressing. Rest also is of no lesse consequnce to the Patient. Now where all these things meet together, and are rightly order'd, they are commonly of very great advantage to the wounded.

I use *Purgatives* with great Caution, and that only after the time of the most *dangerous* *Symptoms* is over, beginning always with the slightest that only loosen, such as *Cassia* and *Manna*, &c. during this Interval, *Clysters*, together with the use of *Prunes*, give no small Relief: *Oats* and *cleansed Barley* being easily digested.

gested, qualify the *preternatural Heat* of the *Blood*, and keep open the Belly.

As for the *Topical Remedies*, which I commonly employ in Dressing of Wounds, they have nothing singular in them that is not pretty well known to the most part of Surgeons.

I avoid as much as possible the use of *putrifying Medicines*, and of *powerful Suppuratives*, because they destroy the Temperament of the Parts, disunite the Particles of the *Blood*, and corrupt and deprave the *nutritious Juice*, which ought carefully to be preserv'd in a good condition. 'Tis this which mov'd the Ancients so often to recommend to us, to maintain the wounded Parts in their *Natural Temper*.

Hippocrates affirms, that all *contused Wounds* ought to be brought to *Suppuration*, in order to a speedy Cure, whereby he seems to patronize and allow the use of *putrifying Medicines*, which commonly are employ'd to bring a Wound to Suppuration. But methinks this ought not to take place in the Hospitals of the Army, where the *Air* is ordinarily infected by the Breath and abode of the Sick; and which are almost ever encompassed with the *Graves* of the Dead, whose number is but too great.

'Tis very certain, that this nearness of the *lace of Burying*, especially in hot Seasons, parts to the *Air*, by the Steams that rise from thence, a Complication of Corruption and ill Qualities, that occasions *Rottenness* in Wounds, *Alteration* and great *Suppuration*, and

often causes great Mortality in the Hospitals, and Places adjacent. Now according to this Maxim of that Author, *Gunshot-Wounds* must be dress'd with these same Medicines, as being of the number of contused ones.

I don't absolutely deny, but there may be some Occasions wherein such may be us'd: However, I may be allowed to say, with all the Respect I owe to so celebrated an Author, that in *Hospitals* we ought to shun as much as possible *Putrifying* and *Suppurative* Remedies, and others of the like Nature, even where the Escar may require a considerable time before its falling: For by the seasonable ordering of *Diversions*, and the Course of *Diet*, all those Accidents are often prevented, which the delay of the Suppuration might cause; and one may without scruple use, as I have done, such Remedies as have a Virtue to resist Corruption; as the Spirit of Wine, which *Etmillerus* prescribes even in *Gunshot-Wounds*, and which I us'd at the first Dressing, on the Day of the Battle of *Marsella*, without having observ'd any evil consequence of my so doing: For besides, a Good Method, which may be call'd the Strength and chief Instrument of a Workman, it is of high concern to understand, and to know how to choose Remedies that agree with the Temper of the Parts to which they are apply'd, and to maintain them: But it proves often a very difficult Task to satisfy *this Intention.*

As there is an admirable variety of *Constitutions*, so it would seem, that it were necessary to use different Remedies to Wounds of the same Nature, and of the same Parts, in different Subjects : The *Sex*, *Age*, and *Season* must also be consider'd. I have likewise observ'd in my Travels, by People of different Nations that have been under my Hands, that divers *Climates* require particular *Applications*, in certain Circumstances, necessary to the Cure of Wounds : For the Constitutions of Men depend chiefly on the Countries they inhabit ; on their *Situation*, high or low, dry or moist, the *Winds* that rule, the *Food* and *Water* that they take : So that they differ among themselves according as the *Heavens* look upon them with different *Aspects*.

But not to search any further into these things, which can't be contain'd within the Limits prescrib'd to this little Work, and don't properly belong to my *Subject* ; I will only say, that it is easy enough to distinguish a proper Remedy from one that is not so : That which corrupts and depraves the *Natural Balsam*, is known by looking into the Wound ; from which, if there proceeds a strong and *Stinking Vapour*, 'tis a sign that the Matter is not concocted, for that it is thin, blackish, too plentiful, watery, and of an offensive Smell.

The *Flesh* likewise has its peculiar Signs ; it is dull of feeling, and sometimes is cover'd with

with another *proud* Flesh : Oftentimes there is to be seen over all the Wound, a certain black or white *Filth*, which some, as I have often known, scrape or cut off at every Dressing, whereby the Wound is enlarg'd, and the Cure delay'd : Others imputing it to the vicious Temperament and ill Disposition of the Patient's Body, have recourse to Purgatives, which occasion still more new Accidents, such as *Fever*s, &c.

But be this as it will, 'tis certain that we ought not always to delay till the last, before we change the Remedy ; our Smell and our Sight alone are sufficient to direct us on this Occasion : *Hippocrates* orders a Medicine to be chang'd, when it does not what it ought, or was design'd for.

But we must not, on the other hand, fall into the contrary Extremity of changing the *Ointments*, sometimes once, and often twice every Day ; not giving time to a Remedy to act, and exert its Virtue on the Part to which 'tis apply'd : 'Tis necessary that the wounded Part draw as it were Nourishment from the Medicine, and therefore it must have a requisite time allowed it for that Purpose : It must, if I may be allow'd so to speak, amalgamate with the *Nutritious Juice* of the Part ; or at least, if it don't encrease its Quantity, it ought to preserve it in the natural State, and when fallen therefrom, restore it again. To be capable of these Effects, it must be endow'd with

with a volatil and oily Spirit, viscous and temperate, as *Balsams* and *Vulnératio's* are, which I have us'd with very good Success.

I have often experienc'd on many Occasions, in several Hospitals, and chiefly in this, and that in very considerable Cases, that after I had in vain us'd many Remedies authoriz'd by *Custom*, the *Balsam* describ'd in the *Sacred Writings*, has had surprizing Effects ; and that Members at the Point of being cut off, have been thereby cur'd with much Ease. This Hospital of *Brianson* might afford many Instances of the Truth hereof, but I shall content my self with the two following.

CHAP. VI.

An Observation of a very considerable Case.

A Surgeon of this Hospital, being one of those who was most employ'd in dressing the wounded, by Accident had a *Thorn* run into the middle Finger of his right Hand, which pierc'd the Tendon of the Muscle that bends it : His whole Hand and Arm were attack'd with very troublesome Symptoms, accompany'd with a continual Fever, extreamly violent, and an unsufferable Pain.

Five or six Days past before I had notice of this Accident ; and all the Symptoms were at the very worst : I found all things in a de-

plorable Condition, the Arm swell'd as big as one Leg, the Hand of a monstrous Size, and the Finger as great as ones Arm; many Cavities were in the inward Part thereof, and some in the outward, from which issued a serous Matter; there was another large *Sinus* under the *Musculus palmaris*, with an Orifice near the Roots of the Fingers.

I immediately laid open the Finger on the inward Part, from one end to the other, and found the *Tendon* swell'd and corrupted: I did not enlarge the Orifices on the outward Part, nor that of the Palm, hoping that all these would be well, if I could but overcome the Accidents.

He was let Blood, and had a *Clyster* given him, tho' somewhat too late; he observ'd an exact Course of *Diet*, and was dress'd with the Balsam of *Arcæus*: Next Morning when I took off the Dressings, I was surpriz'd, as I had been the Day preceeding, with a Vapor of an intolerable Smell; the Lips of the Wound were turned outward, which made me despair of a Cure, and judge it would be necessary to cut off the Hand: The Matter remain'd undigested, the Fever, the Pain, and the Swelling continu'd as before; so I dress'd him in the same manner as the Day before, with addition only of a little Spirit of Wine. The Bleeding was repeated, and also the *Clyster*.

The day following the Wound was in the same Condition, only the Corruption appear-

to increase : And we were of Opinion that nothing but *Ampputation* could save his Life : But for as much as Art and Reason dictates, that the preservation of the Members ought to be endeavour'd as much as possible ; and as we are oblig'd in Conscience to try all Remedies before we come to that Extremity, I resolved forthwith to change the Medicines, judging rightly, that what had been us'd might have occasion'd this depravation of the Salts ; whence it was to be fear'd a total Corruption of the Nutritious Juice might follow.

With this view I us'd the *Balsam* of the *Scriptures*, mixt with a third Part of that of *Arcæus* ; in this I wetted the Pledgits, which I apply'd very warm over all the Wound, and upon the Sinus's : I pour'd some of it also into the Sinus of the *Musculus palmaris*, and upon it I put a Plaister of *Diapalma* dissolv'd in *Oil of Roses*, and good *Vinegar*.

On the next Day after this we found all things much chang'd to the better : The *Fever* and *Pain* were lessen'd, and there was nothing of so ill a Smell as before.

I question not but the *Fever* is a Symptom Troublesom enough, and able to cause all these Effects ; and that by the Motion it excites in the Blood, it separates saline and sulphureous Juices, that by irritating the Fibres may occasion that turning out of the Lips of the Wound, their Swelling, and that insupportable Smell : But it can't on the other side be deny'd, that

outward Remedies contribute much to cure that Fermentation and Corruption wounded Part, when they are such as p because they dissolve the Blood and other quors, causing Irritations, Corruption great Suppurations, and destroys the T rament of the Parts to which they are apply'd Whereas when Balsamick and Spirituall Medicines are us'd, they produce quite co Effects: For by allaying the Sharpness Humours, and making the Blood fluid resist Corruption, dry up the Moisture, the Place where they are apply'd by the

In fine, whether it was by this, or any Way, 'tis certain that the Change of the Medicine here produc'd a notable Alteration our Patient; for tho' the Fever appeared very little abated by all that I had done, the very next Day after this, th begun to come nearer together, the P Defluxion ceas'd, and which is most the ill Smell was quite vanish'd; so that 6 Days he was past all Danger, and the was compleated in a little time after.

M. le Clerc, Physician to the King, *Compleat Surgery*, commends much the Samaritan Balsam, to which we have given the Title of, *The Balsam of the Holy Scripture*, and the Approbation of such a Man is sufficient to justifie its Use. So I reckon 'twill not be proper to subjoyn here the Description of another compound Samaritan Balsam of

nirable Vertue. It is made up of equal Parts
of Spanish Wine and Oil of Roscs to each
ound, of which mixture two Ources of Su-
arcandy, and as much Honey of Violets must
e added, and all boil'd on a gentle Fire, and
kim'd till the Wine is consum'd. This may
e call'd the *Balsam of Balsams*, or the *Com-
ound Samaritan Balsam*.

C H A P. VII.

An Observation of another Case..

MR. *Vert the Younger*, an Ensign of the
Company of M. *de Beauvet*, Lieute-
nant of the King at *Brianson*, and Comman-
ler of the Second Batallion of *Sault*, had no
es Reason to applaud my *Method*, and the
ood Effects of my *Remedy*, than the Person we
liscours'd of in the preceeding Chapter.

He was wounded with a Sword at *Prage-*
as, in the outward Part of the left *Arm*, near
the bending of the *Elbow*. The Wound was
t first neglected, being not well dress'd ; for
without dilating it in any manner, a *Tent* was
hrust into it as long as it could possibly re-
eive ; which occasion'd such dismal Acci-
lents, that the Patient thought of nothing but
osing both his *Arm* and his *Life*. In the in-
ward part of the *Arm*, opposite to the Wound,
Matter was collected, and *Abscesses* form'd,
which

which oblig'd him to consult the principal Surgeons of the Regiments, who thought it convenient to make an *Opening* in that Part ; which accordingly was done. By the large and deep *Incisions* that were made, the *Artery* was opened ; so that they were oblig'd to use the *actual Cautery* to stop the Bleeding : By this means the Wound was enlarg'd, and the Pain and the Accidents encreas'd.

The first Wound was still dress'd as before, with *Tents* ; but the wounded Person having kept his Bed for fifty Days, and his Wounds being still in a very wretched Condition, he was advis'd by the abovemention'd Gentleman M. de Beauvet, to cause himself to be transported to *Brianson*, to try if there he might find any Help. Accordingly he was committed to my Care, and I found the inward or lower Wound the length of a large Span, and four or five Fingers-breadth wide : The *Artery* and *Tendons* were uncover'd : The ancient or outward Wound, whose Orifice was very streight, had in it a pretty long *Tent*, which shut up the passage of three or four *Sinus's* that took up all the Joynt.

The Arm and Hand were Oedematous, being much swell'd, and painful. I began by making an Incision in the Wound on the outward Part, whereby I discovered the Orifices of the *Sinus's*, into which I dropt a little of our *Balsam*, mixt as I formerly said, with some of that of *Arceus*.

The

The large and lower Wound was drest with the same Remedy : We us'd expulsive Compresses, to press together the Sides of the Cavities, which we keep on with a proper Bandage : And withal we laid aside the *Aromatick Wines* that had been us'd before upon all the Part, to his great Detriment.

Three Days after it had been drest in this Fashion, the most part of the Accidents disappear'd : He begun to rise up from his Bed, to eat his *Virtuals*, and to gather Strength ; all the deep *Cavities* were fill'd up ; the *Artery*, the *Nerve*, and the *Tendons* were cover'd over ; the *Pain*, the *Fluxion* and the *Oedematous Swelling* were quite gone ; and by this powerful Incarnative the Cure was compleated in a Fortnight, with the Assistance of a little *Unguentum Apostolorum*, wherewith we sometimes use to consume the Flesh : After this he mounted his Horse, and went for the *Air* into his own Country.

This I may confidently affirm, as a certain Truth, that when the Balsam we speak of is genuin and unsophisticated, it may serve at the same time both for *Food* and *Medicine*, being made up only of *sweet Oyl* and *Wine* : And that it may be us'd not only for curing *Wounds* of the *Mouth*, of the *Tongue*, of the *Gullet* and *Wind-pipe*, and generally of all the *Breast*, but likewise in obstinate *Dysenteries*, and *Relaxations* of the *Fibres* of the *Ventricle*, in *Ulcers* thereof, and in those of the *Guts*,
and

and of all the *lower Belly*. For if we consider its Nature, we shall find it of a friendly Quality, and extreamly agreeable to our Constitution, as being compounded of such things as serve us daily for Food. *Sweet Oyl* softens, loosens, sweetens and penetrates; and when it is boil'd with *Wine*, which it devours as it were and consumes, retaining with its self all the Vertue thereof, it is enabled to perform all those Operations with much more Ease: It cuts, dissolves, strengthens, restores the Spirits, breeds Flesh, and is Astringent; all which our *Balsam* performs, being endow'd with the most useful Vertues of these Remedies, and containing a *Volatil, Oily, and Temperate Salt*, that is Astringent and Sarcotick: And if a little *Sugar* is boil'd with it, it becomes yet more excellent, is more Vulnerary and Balsamick, has no Acrimony, and is without either Smell or Taste.

'Had this *Remedy*, how simple soever it may appear, produc'd such Effects in the hands of any other but my self, they wou'd without question have made a great Secret of its Composition, and tho' this had been known to many, yet they wou'd never have publish'd its *Vertues*.

It were mightily to be wish'd, that there were only *one Remedy*, which might be able to answer all Intentions, that we shou'd not be always oblig'd to have in the Patient's Chamber a whole *Apothecary's Shop*; which is often no less prejudicial to the *Purse*, than offensive to the *Smell*. Be-

Being about 6 Years ago at Turin, I cur'd a Gentleman of an inveterate Ulcer, that encompass'd all the Bottom of the *Uvula*: Many Surgeons had to no purpose us'd a great many Remedies: And I in like manner, after the use of some more with no better Success, bethought my self at length of my *Anodin Balsam*: In this I dipt a Linnen Rag ty'd to the end of a Probe, and therewith touch'd the Ulcer twice a Day: By this means, as I solemnly protest, in 12 or 15 Days the Ulcer was cur'd.

This Remedy, how Ancient soever it is, will appear New to many. However, 'tis certain, that *Hippocrates*, in complicated Fractures, us'd little Linnen Rags dipt in *Oyl* and *Wine* mixt together, to allay the Pain, and prevent Convulsions, which is a Precedent sufficient to invite our Imitation.

It hath been the Policy of almost all who ever wrote of Medicine, still to reserve something undiscover'd to themselves. I could name a great number of Authors, who have publish'd the Virtues of certain Remedies, whereof they have never given the *Composition*; or if they have, it has been in such Ambiguous and *Aenigmatical Terms*, that it is hard to understand any thing of it. And indeed I must acknowledge, that a Remedy, when it becomes common, how good soever it may be, loses much of its Esteem.

I have formerly said, that the Variety of *Constitutions*, and Diversity of wounded Parts,

require sometimes a Difference of Remedies; to this we must have all due Regard: For it often falls out, that even the most excellent Medicines, are not capable to answer all our Expectations; especially when the Patient is of an ill Constitution, and the Distemper obstinate and troublesome.

However, it is not good to put too much Confidence in this *single Composition*, as if it were an Universal Remedy, if it any time the Success prove not answerable to our Desires: I own, that I have been oblig'd my self in such Cases, to boil in our *Balsam*, the greater Compound, *Bugle*, *Sanicle*, some *Lavender*, *Clary*, *St. John's-Wort*, and the lesser *Moon-wort*, which is a powerful Vulnerary, and very common in these Parts; and afterwards to give it some Consistence, with a third part of the *Balsam of Arcæus*: This *Composition* has done surprizing things; it hath consum'd and remov'd *Fungus's* from *Feet* that had been entirely *Frozen*, and also from *Amputations*, which had withstood all other Remedies: It procures a good and moderate *Suppuration*, eases the Pain of *Wounds* in the *Nerves*, allays and resolves powerfully, fills up with *Flesh* in a small time; and in fine, an *Embrocation* therewith cures speedily *Bruises* of all sorts.

Tho' I have a great Esteem for these Remedies, and am confirm'd in my Opinion of their Excellency by a multitude of *Experiences* that I have had, yet I don't pretend to lay aside

the

the Oyntments, Cerats, and Plasters of Pharmacy; which may be of very great use, and are every Day employ'd with Success, by very skilful Persons in curing Wounds.

This only I will affirm, by the way; that the most part of Oyntments have a strong smell, that is not only disagreeable to the Wounded, but is also no less hurtful to the Wounds than offensive to the Smell, and tends very much to render them *putrid, sanguinous, and Virulent.*

There are also several Places, where they very unadvisedly use *Corrosive Sublimat, Arsenic,* and other things of a like Nature in the Cure of Wounds, not foreseeing their fatal Effects. But in this point we can't be too cautious: All the Parts of our Body are made up of *Veins, Arteries, Nerves, Lymphatick Vessels* and *Glands*, that are easily affected by whatever touches, and by means of the *Circulation*, convey to the *large Vessels* and the *Original* of the *Nerves*, the good or ill Qualities that are imparted to 'em. The *Contagion*, that is communicated to the Sheets of a Bed, wherein one that has the *Pox* or *Itch* has lain for a Night only, will imprint its Characters on a sound Person, that afterwards lyes in 'em; tho' the impure Matter touch only the *Scarf-skin*, and is to Appearance much less active than *Arsenic* or *Sublimat.*

The Unfaithfulness us'd in making up certain *Compositions*, which I have experienc'd on some

some Occasions, hath oblig'd me to resolve to make up my self some that are more simple, and much more effectual.

Etmuierius, in his *Medicinal Surgery*, and many others before him, have complain'd of the prodigious number of Medicines used in Practice, and of the many *Plasters*, *Ointments*, *Cerats*, and a thousand other useless things good for nothing, but to perplex the Mind of young Surgeons. That great Magazine of *Pharmacy* might be reduc'd to much narrower Bounds : Experience has convinc'd me of the truth of this ; and there are at this time many Persons very expert in Chirurgical Practice, that are herein of my Opinion, some of whom think that one Remedy only may answer all ; 'twere well if such a Method might be establish'd, for the good of the Wounded, and the convenience of Surgery.

But I am inclin'd to think, that no Man has yet gain'd that Point, which is extreamly hard to be attain'd, because of the diversity of Parts whereof we are compos'd, and the variety of Constitutions in different Persons : 'Tis this Consideration hinders me from crediting that Universal Remedy which a certain modern (otherwise a very able) Surgeon, at some distance from these Parts, hath endeavour'd to establish. But if I am not altogether of this last Opinion, I am yet much further from that of the Ancients, who have left us such a numerous List of Remedies, as can't be either com-

mitt'd to the *Memory*, or retain'd therein. A great deal of Study and diligent Application is necessarily requir'd, in order to know their *Vertues* and *Properties*; for, to make the right use of a Medicine, we must know its *Nature* and *Effects*, not leaving the Success to Chance and the Fidelity of another, as is often done.

Moreover, 'tis very hard to believe that all these mighty Compositions are answerable in their Effects to the Expectations had of 'em; the numerous and differing Ingredients do oppose, alter, and destroy one-another. The simplest Things are most agreeable, and sympathize most with our *Nature*.

I could never yet learn, that *Solomon*, who had an universal Knowledge of all things, left behind him for the cure of Wounds, *Compositions* so perplexing, and stuff'd with such a number of Ingredients, as those which some use at this day: In his time 2 or 3 *simples* suffic'd to make a Balsam, nothing inferiour to others now cry'd up as *Infallible Remedies*.

Balsams are recommended in the curing of Wounds by the *Ancients*, and almost all the *Moderns*, contrary to the Opinion of some that practise Surgery, who being Enemies to Antiquity, act (as the *Quacks* do) contrary to all manner of *Reason*; but an indiscrete Passion ought never to prevail over that which is justified and supported by *Experience*.

Tho' I don't approve of Medicines made up of numerous Ingredients, yet I have often us'd

us'd the *Styptick Plaister* of *Crollius*; which, though it may be accounted of this number, ought not at all to be laid aside: For when it is faithfully made up, it hath *Virtues* too effectual to be neglected, and not sought after. When I have a Mind to give it a softer Consistence, and reduce it to the form of an *Oyntment*, that I may make use of it in dressing of Wounds, I melt it with the *Balsam* which I have describ'd; and sometimes with the *Oyl* of *St. John's-Wort*, prepar'd with *Gum-Elemy*.

It will answer all the Expectations that may be had of it, in curing Wounds and Ulcers: It allays Pain, cleanses, and breeds Flesh: Those who will give themselves the trouble to examine its *Composition* and *Ingredients*, will agree with me, that 'tis not impossible, but it may have all these *Vertues*.

I have sometimes us'd, and also in this *Hospital*, a *Red Balsam* made with an Ounce of *Red Saunders*, and *White Wax*; two Ounces of *Venice Turpentine*, *Oyl of Roses*, and *Rose-water*, and a Dram of *Sal-Armoniac*; all mixt together, and hastily boil'd, and kept for use: It resists *Putrefaction*, and lessens *Suppuration*.

The *Simple digestive* is a Remedy that I commonly use to bring away the Escar in Gunshot-Wounds, mixing always therewith a little of the Yolk of an Egg, and some Spirit of *Wine*: I renew it every Day, because it soon corrupts, by Reason of the Yolk of the Egg.

Turpentine is a simple *Balsam*, which is ex-
cel-

cellent for the curing of Wounds: The Country People about *Brianson*, who gather a great quantity thereof from the Wood of the *Lath-Tree*, use nothing else but this *single Remedy*, without any mixture, for the Cure of their Wounds: Certain it is, that they who are accustom'd to mix with it a great number of *Ingredients*, and *Catagmatick Powders*, spoil its *Vertue*, and can expect nothing from it but bad Success.

Arcæus his Balsam us'd in so many Places, is not to be despis'd when rightly compos'd: But 'tis convenient to remark, that it agrees not to all *Distempers*, nor all *Parts* of the *Body*, as was observ'd in the first Remark of this third Part: Which I have also experienc'd since, on many other Occasions.

Basilicon is one of the most common Ointments, and most us'd: I sometimes employ it to receive the Powders that I think necessary, either to Irritate, or procure Suppuration when I judge it convenient: Otherwise I don't much deal with it.

It sometimes falls out, by the use of *Sarcatick Balsams*, that the Flesh grows so fast, as to oblige us to consume it; and also Orifices of the *Lymphatick Vessels* oftentimes raise up certain *Protuberances*, that together with the superfluous Flesh, forms as it were a resemblance of *Mushrooms*, which some endeavour to remove with *Catbaricks*, but to no purpose.

I have

I have observ'd, that to touch the *E* *scence* all over with a Dissolution of the *C* *Stomach*, is much better than any other n that can be us'd for this Intention, pro the Application is renewed so oft as is ful. I have in eight or ten Days consi *Mushroom*, as big as my Fist, which th dinary Powders cou'd not have done in Months. It may be seen in several Plat the second Part of this Book, that I have it with a quick and happy Success, when was Occasion to take off the *Callosity* hing to Wounds, in order to procure a R on: And when these kind of *Protuberances* but a dull Sense, I don't scruple to sprinkl on them the 'foresaid *Caustic* pulveriz'd, apply *Pledgets* dipt in a Dissolution the till I have procur'd such Smoothness as quisite in order to a laudable *Cicatrix*, have restor'd the Feeling of the Part.

When I only intended to bring to an E lity the luxuriant Flesh, and procure a and handsom Scar, I have us'd with good cels *Unguentum Apostolorum*, mix'd with the *Unguentum Egyptiacum*: This des proud Flesh, and is an excellent Medicin *There* to be apply'd before the use of our

Remedy only : 'Tis true, it delays *Suppuration*, and protracts the coming away of the *Slough* in *Gunshot-Wounds*; but it powerfully resists *Putrefaction*, corroborates and quickens, hinders *Excessive Suppuration*, and the *Dissolution* of the *Nerves*, in which *putrifying Medicines* are very hurtful.

The *Emplastrum Tripbarmacum Juberti*, made of *Litharge, Oil and Vinegar*, to which I add a little scrap'd Lint, is admirably good to digest a Wound, and bring it to *Suppuration*, without occasioning great *Putrefaction*. It mightily dissolves *Contusions*, and its use is of great benefit.

It is certainly very convenient that a Surgeon have some *peculiar Remedy*, the Vertues whereof he is well acquainted with, to which he may have recourse in obstinate and troublesome Accidents that sometimes follow upon Wounds, and will not yield to the *Common Remedies*. It is likewise oftentimes expedient to change the Medicines, as I have formerly said, and not always to be confin'd to one thing : For the Fondness one may have for a *Balsam* or an *Oyntment*, that possibly may have done very good Service on many Occasions, ought not to prevail so as to make us employ it in all Times and Places : The *best* and most *approv'd Remedies* have not always the same Effects, or the same Success : For certain it is that not meeting with the same Constitution in all Persons, 'tis impossible they can have the same Operations.

Re-

THE HISTORY OF THE IRISH SURGEON.

and I have said before, and it daily
happens, that Quacks who have neither Skill
nor Education, have succeeded in the Curing
of many Diseases, after they were given over
by regular Surgeons, who had bestow'd much
time, and used many Remedies to no purpose:
But I can't say all this is strange, for those
are scarce Persons to be seen on such occasions;
and for the most part works these Miracles,
that are so easily attributed to them, and give
such Reputation to their Practices.

Nor is that acting without any Rule,
they commit many gross Blunders; being un-
acquainted with the Errors to correct, over-
look them, or take the Accidents that af-
flict them for open Wounds; for all their
knowledge is further than to the making
up of their Remedies; and that which can't
be cur'd by those, passes with them for in-
curable. It is not so with regular Surgeons;
they know the Causes of Accidents, and apply
thereto the necessary Remedies, without aban-
doning the wretched Patient to this ill Fate.

It is indeed a notorious Shame, that a
wounded Person should go from under their
care, by a Quack, a Clown, or a
Fool, who are known in several Places
by the sale of their Remedies have
a Reputation; whether by the
wounded People had of the
air Balsams; or for a Reason that
is very convincing, to wit, that though they

they neither us'd *Tents* or *Dilatets*; yea, in very express terms discharg'd them, yet they often succeeded in their Cures, to the Disgrace of *Surgery*. However, it must needs be, that the Inventors of these *Balsams* did discover some Inconveniences in the use of *Tents*, since they have altogether forbidden to employ 'em: Now, I suppose it will easily be believ'd, that those Men or Women who are employed in selling them, are not the first Authors; and that those who first us'd 'em, were not altogether destitute of Knowledge.

Diapalma is one of the Plasters most commonly us'd in the Hospitals of the Army: When it is rightly made up and dissolved, as was said before, it is not to be despis'd: And I add to it, when the Case requires, a little of *Emplastrum de Betonica*.

Emplastrum Divinum, *Manus del Gratia dei*, &c. are Plasters of a singular Virtue; but very seldom to be found made up with all the requisite Fidelity.

I have nothing in particular to say concerning *Cataplasms*, according to the ordinary Method: It belongs to the prudent *Surgeon* to give them what Form and Qualities he thinks fittest for the present Occasion.

I have often found much more Advantage from the Use of *Emplastrum Tripharmacum* spoken of before, and *Diapalma dissolv'd*, which don't so much clog the Parts to which they are apply'd, nor hinder Transpiration. Anodine

Cataplaſms, ſuch as that of the *Crum of Bread*, and others of that nature, are very uſeful in great *Inflammations* of *Wounds*, after the neceſſary *Diverſions* have been perform'd; they allay the Heat of the *Blood*, extinguish the Acri-mony of *Salts*, and relaxate the *Skin*. *Unguentum Santalinum* may likewife be uſ'd to good Purpose: And when the Pain is partly remov'd, I then uſe *Diſſolving Medicines*, which at firſt might have encreas'd the *Inflammation* and *Fermentation*.

Before I put an end to this Discourse, I muſt remark, that it is very requisite for a Surgeon of a Field-Hospital, or of an Army, who may ſometimes be ſhut up in a beſieg'd Place, ill furniſh'd with Medicines for the uſe of the Wounded, to understand how to make up ſimple and eaſy Remedies with few Things, ſuch as thoſe beforemention'd for *Wounds*, and thicſe of which I ſhall afterwards ſpeak for *Ulcers*, which in time of need may ſerve for all: *Brandy*, which is the ordinary Refuge in want of other Remedies, may alſo be lacking. Tis the part of a prudent Surgeon wiſely to provide for thiſ neceſſity, and to accommodate himſelf to the time, by dressing the wounded ſeldom, and according to our *Method*: Thus fewer Medicines will be uſ'd, a little will go a great way, and every one will have reaſon to be ſatisfy'd.

A great number of *Abscesses*, *Wounds*, *Ulcers* and *Fractures* of all ſorts, that have been under our Hands in this Hospital, were cured

according to this *Method*; wherein there is nothing but what is *Gentle* and *Easy*. All the *Amputations* that we have perform'd were dress'd only once in two or three Days, during the whole time of the Cure, with our simple Remedies, and that with very good Success. Those who have been so happy as to avoid the malignant Influence of the Contagious Steams that have so long prevail'd in the *Air*, have experienc'd the Comfortableness of this *Method*, by the suddenness of their Cure, compleated without any *Exfoliation* of the Extremities of the Bones; which infallibly had followed on frequent *Dressings*.

I commonly use a *Button of Vitroil* to cauterize the Vessels, and stop the *Bleeding*, which I ever found successful; neither did the flux of Blood ever return. The two Stitches with a Needle, made cross-wise upon the *Vein* and *Artery* are very sure; this is a common Way, which I have sometimes, and still do follow: But the Falling of that *Suture* is sometimes so tedious, that it exhausts the Patience, both of the wounded Person and the Surgeon; tho' after all, its use is very safe: For the *Bleeding* is less to be fear'd this Way, which is quick and gentle, than any other. The *actual Cautery* is now out of use, unless it be in *Amputations* perform'd on the *Dead*.

Tho' in the Cures of the Penetrating Wounds of the Thorax, spoken of in my second Part, I was not oblig'd to perform the Operation of

the *Empyema*, yet I have had Occasion to do it on many other wounded Persons, if I embrac'd this *Method*: For take what or what Care you will, it is oftentimes truly necessary. When the Cavity of the Breast is full of Blood, and the Orifice of the Wound high, it is not then safe to attempt to empty it by the way of *Urine*, which might be too slow, and is too uncertain; but we without delay fall about that *Operation*.

I will not here describe the Manner of performing this, or other *Operations*. M. *Ve* and M. *Charriere*, have lately afforded sufficient Means of Instruction in this Affair. I will only say on the Subject in hand, that this *Operation* ought always to be performed on that Side where the Effusion of the Fluid is; and if it is found to have been on both Sides, and one *Opening* does not give the relief that is expected, tho' the *extravasated Blood* be discharg'd, we must make an *Opening* at the other Side, after the first is carefully closed up, and the Patient has had some time all to recover his Strength. Sometimes I am oblig'd to use *Tents* for the first Day, let the *Division of the Pleura*, that was but now made, should unite again; and so there will be necessity of a new *Operation* the next Day to let out that *Blood*, which being coagulated could not at first be brought away, and hardly be evacuated by any other means than those *Openings* made in the Body by the

Gunshot Wounds, there is no need of Tents to keep 'em open, for they cannot be clos'd up till the Escar is separated.

I have already said, that in the Openings or Incisions which I make to evacuate the Collections of Matter, or *Abscesses* in the Thorax, occasion'd by a *Pleurisie* or *Peripneumonia*, I use *Tents* without a *Point*, or blunt *Tents*, in the first Days, to keep the *Matter* from coming out all at once, otherwise the Place that was possest by the *Matter* wou'd soon be fill'd with *Air*; which being ever colder than the inward Parts of the Body, might occasion *Coagulations*, *Suffocations*, and *Swomings*. Moreover, when a great deal of *Blood* is extravasated, it must be let out by degrees. Now on such occasions *Tents* are necessary: But that being once over, I lay them aside for good and all, that a free Passage may be given to the *Matter*, that the Generation of a *Callofity*, about the Sides of the Opening may be prevented, and that nothing may be left to hinder the Reunion.

By this *Method* the wretched Patient is delivered from a great deal of *Trouble*, *Pain* and *Vexation*; being enabled hereby to enjoy a *Repose*, which otherwise he could never have expected: And by freeing him thus from *Pain*, what innumerable Accidents are avoided?

Had not Charity and Patience prevail'd in this Place, and restrain'd us from cutting off, without further delay, Members that were only gangren'd by an Extremity of Cold, as other

Surgeons of *Hospitals* have done, this of *Bri-
ançon*, wou'd have been full of Invalids. For
about the end of the Campaign, in the Years
1692, and 1693, a great number of sick Per-
sons were brought thither from *Pignerol* and
Oulx, who in passing the Mountain *Genevre*,
were in such manner seiz'd and penetrated
with the Cold, in the Extremities of the Body,
that a total *Loss* of Sense, and also a *Gangrene*
did ensue; the most part of whom were ne-
vertheless cur'd without *Amputation*, those
only excepted that had been before worn out
with long Sicknes.

C H A P. VIII. *Of Gunshot Wounds.*

Since *Wounds* are the principal Subject of
this little Treatise, 'tis not proper that those
inflicted by *Fire-arms* should here be forgotten.
Wherefore I shall say something of them in
this Chapter.

Gunshot Wounds are acknowledged by all to
be very troublesome, because of the *Tearing*,
and of the *Disordering* the *Flesh*, occasion'd
by the *Bullet*, the stop put to the *Circulation*
so far as they reach, the *Havack* that attends
them, and the *Obstructions* they occasion; all
which are but too too able to produce very
*grievous Accidents. Fluxions, Mortifications and
Gangrenes* are here very much to be feared;

to prevent which, I at first give breathing to the Wound with pretty large and deep Incisions, according as the Nature of the Part, and bigness of the Wound do require. I do my utmost to draw out the *Extraneous Bodies*, if there are any, putting the wounded Person in the same posture wherein he received the Wound: Afterwards I dress it according to my Method, and seasonably perform the requisite Diversions: A *Flux of Blood* is almost never to be fear'd till the Escar be fallen, unless some great Vessel be wounded.

Nevertheless I can truly affirm, that there never happened to me any Flux of Blood in Gunshot-Wounds, since I laid aside the use of Tents; for according as the Escar is dissolv'd and comes away, a new Flesh is bred without any hindrance, and covers the wounded Vessels, which can't be when it is press'd by Tents. This is a Truth so evident, that I hope no Man will call it in question.

Diet ought always to be rightly order'd; and if notwithstanding all our Care and Pre-caution, dangerous Symptoms do follow, we must endeavour to ease and relieve the Part, by making many *Scarrifications* thereon, in or-der to give a Vent to the *extravasated Blood*, and to hinder its *Stay* and *Fermentation*. But considering that most of the Accidents that happen, are more or less troublesome, accord-ing to the different bigness of the *Contusion*, I do what I can to dissolve it as soon as possi-

ble, and to restore the *Humors* to their usual Motion ; for according to the Definition we have laid down in our first Part, a Contusion is a *Disorder of the Fibres and little Vessels, that changes the Regularity and Situation of the Pores* : But this is often accompany'd with an *Effusion, or Extravasation of Blood*, which pressing upon the *Vessels*, hinders the Course and Motion of the *Humors and Spirits*. The Accidents that follow in this last Case, are much more troublesome ; wherefore, without expecting the Effects of dissolving Medicines, I forthwith have recourse to *Scarrifications* ; for *Mortifications* oftentimes surprize of a sudden. But, after all, as things come not always to this pass, so I sometimes use *Dissolving Medicines*.

We have known a very warm *Embrocation* with *Oyl of Roses*, to which was added a little of that of *Turpentine* and some *Spirit of Wine*, produce exceeding good Effects : It begins the *Dissolution*, relaxates the *Skin*, and disposes the Part to receive afterwards the Impression of the Plasters ; such as the *Tripharmacum Juberti*, *Diapalma* dissolv'd as we have ordered, fresh *Cow-dung* fry'd with volatile Salts, as also that of other Animals : The Roots of *Briony* infus'd in *Spirit of Wine* are in this Case very proper.

Dissolving Cataplasms are sometimes very seasonable, provided they be not too emplastic ; and if in spite of all our Care a *Gangrene* should follow, we must use the Remedies

dies which were describ'd under that Head. But this Accident never yet fell out in any of the Wounds, whereof we had the first Dressing; and I can averr, that tho' *simple Gunshot-Wounds* are dress'd in this Hospital as *Excoriations* only, yet are they always cur'd with a surprizing Quickness; we however still perform all the necessary Diversions. The Remedies we us'd may be seen in the Relation of the Cures.

CHAP. IX. *Of Burnings.*

THE Accidents occasion'd by *Gun-powder* might afford us Subject of much Discourse upon *Burnings*; but I design only to speak a Word or two of 'em, that I may thence have occasion to point forth the *Remedies* I use in their Cure.

The Tallow of which they make Candles, melted with the Oyl of *Walnuts* to the Consistence of an Oyntment, will answer all the Intentions propos'd in this Matter. I have not found any thing either so effectual, or so easie: It will terminate the *Empyema*, and cures generally all sorts of *Burns* whatever, in a very short time: In fine, this is the Remedy which we ordinarily use. *Benjamin, Unguentum Populeum*, and the *Tolks of Eggs*, may be us'd when this can't be had. There are but very

few Surgeons, who have not always particular Remedy for Burnings, some i some less effectual. *Etmullerius* and Authors have given a great number of good ones; and *M. Verduc*, in this *Pathē* explains their *Nature* and their *Differen* a very clear and intelligible way.

A little time after the Declaration of an Accident happen'd in the Valleys o cerne, which afforded us many frightful Etacles. The Guard-house of the Fort of call'd St. Maries, fell down upon about Soldiers, as they were warming themsel bout a great Fire; of whom twenty, or abours, were buried with the Ruines, Chimney, by the Fire. A good deal of was spent before they could clear away Stones and the Rubbish, and get out these wretched Creatures. Some were found and roasted; others were brought int Hospital of Lucerne. A Plaister as big Bed-sheet, was scarcely sufficient to dress Two or three dy'd, and five or six were by the assistance of *Cordials*, *Diaphore*

ere, for the most part, like so many Servt's, oblig'd to cast and change their Skin.

CHAP. X.
Of Ulcers.

Vallerus is of Opinion, that the Cause of *Ulcers* proceeds from an *Acid*, whereby immediate Nourishment distributed to it is corrupted, and losing its Oily andick Nature, becomes sore, and alto-unfriendly to the Part that it ought to, and so considerably encrease the *Acid* it, and augment its Activity.

ording to this Definition, a *Topical Remedy* accommodated to the kind of the *Ulcer*, and that destroys *Acids*, and repairs the amick Nature of the Nutritious Juice, tient to bring this sort of Distemper to & Cure. I have often in this manner many poor afflicted Creatures, without any change in the manner of Dressing: in the first Place, that *Ulcers* are but too common in the *Hospitals* of the *Army*: The et of the *Soldiers*, their *Irregularities*, *fatigues*, and their unavoidable *Nastiness*, re than enough to torment such as are obstinate, and difficult to be cur'd. Se, we have in this *Hospital* follow'd a Me- whereby in a little time a great number

of *Ulcers* were cur'd: For after *General Remedies* and some slight *Diversions*, I us'd a Decoction of *Walnut-Leaves* with a little *Sugar*; in this I dipt *Pledgets*, which I apply'd moderately hot, letting often 3 Days pass over without taking off that Dressing.

Many Persons in *France*, I know, have kept this *Composition* as a great Secret; but I thought it would have been inconsistent with *Charity*, not to publish its Vertues, and the manner of making it.

I have experienc'd on a thousand Occasions, that it mightily cleanses, and breeds *Flesh*; mortifies and devours *Acidities*, resists *Putrefaction*, plentiful *Suppurations*, and consumes the *Moisture* that hinders *Re-union*: In fine, it hath Vertues that surpass Belief, and its Effect is more quick than that of all the *Oyntments*, and *Cerats*, with which *Apothecaries* Shops are stor'd, and which are commonly us'd in curing of *Ulcers*, but often to no purpose. In the mean time, I dare affirm, and that truly, that in the Places where I have us'd it, all such *Ulcers* as were formerly thought *Incurable*, were thereby cur'd in a very short time.

Tho' I do but very seldom make any use of *Injections*, nevertheless, I have been sometimes oblig'd to have recourse to this Remedy, from which I have reap'd more Advantage than from all those us'd in Practice; and especially in hollow and deep *Ulcers*: As also

in large *Abscesses* of fleshy Parts, where there is great *Putrefaction*, and sometimes a considerable Cavity.

* The *Scriptural Balsam*, spoken of before, which is only an equal quantity of *Oyl* and *Wine*, boil'd to the consumption of the latter, is also an excellent Medicine for *Ulcers*: With this Remedy alone I have cur'd great numbers.

Many *Authors* there are, who have left us an Account of a vast number of *Remedies* which are us'd in *Hospitals*; for which Reason I will say nothing of them here, where my Design is only to make known those I use in my own Practice.

By what I have said of the seldom dressing of *Wounds*, it may be easily guess'd, that I am not for frequent Dressing of *Ulcers*: For if they proceed from an *Acid*, as *Etmullerus* thinks, we ought to endeavour not to promote the Coagulation, by admitting the *Acid* of the *Air*, which by insinuating its pointed Articles into *Ulcers*, corroborates the Cause, renders 'em putrid, sanguis, and incurable.

'Tis not without ground, that *Galen*, as hath been declar'd already in the first Part, in his 4th Book of the *Composition of Medicines*, Chapt. 4, hath order'd to dress *Ulcers* but once in three Days: And I believe it would be yet better, to do it more seldom; unless some urgent Cause require it; such as the Seasons of the Year, the badness of the Humors, or some other evil Disposition of Body.

We may observe, that Suppurative Medicines, us'd in dressing *Ulcers*, are extreamly pernicious : For the *Matter* is but too plentiful, and requires to be lessen'd, and dry'd up, if we desire a perfect Cure. The Application of *Topical Remedies*, when well chosen, oftentimes performs in this Case what neither *Diversions* nor *Internal Medicines* could do ; and of such there are good store : But it depends only on the *Prudence* and *Skill* of him that prescribes 'em, to use them seasonably ; for we can expect no *desirable Effects*, either from one kind or another, but according as they are properly apply'd.

Unguentum Apostolorum mix'd with *Unguentum Egyptiacum*, is not to be despis'd : It consumes all the corrupted, and the superfluous Flesh, I have often apply'd this, before I made use of our *Lotion*.

The *Aqua Phagedenica*, or *Lime-water*, mixt with *Salt of Lead*, or *Sal-Armoniac*, and *Aqua Celestis*, have also serv'd us on such Occasions ; for if one Remedy fails, as it often falls out, we must have Recourse to another.

C H A P. XI.

Of Simple Fractures.

IN the Cure of *Simple Fractures*, commonly four things are propos'd to be done. First,

to set the Bone, or bring it to its natural Figure. Secondly, to keep it so, with fit Dressings. Thirdly, to take care of the neighbouring Parts. And fourthly, to give the afflicted Member a convenient Posture.

First then, *Extension* is almost ever necessary, to reduce the *Bone* to its natural State, which is to be more or less vigorous, according to the *Quality* of the *Fracture*, the *Nature* of the *Broken Part*, or the *Age* and *Sex* of the Patient: But we must observe not to make Extension, when *Inflammation*, or other *Accidents* appear, till they are either remov'd, or considerably abated.

As to the second thing, which is the *necessary Dressings*, I have always observ'd the Direction of *Hippocrates*, in using three *Bands*, as he did, in *Simple Fractures*: *Celsus* employ'd six, but these, in my Opinion, were too many for the Part: Wherefore, I chose rather to follow the Practice of *Hippocrates*, approv'd of by *Galen*, in the *fifth Chapter* of his *Book of Method*.

Most of those who practise *Surgery* differ in the Use of *Topical Remedies*. Some apply *all Dry*: As for my self, who am not confin'd to the Way of the *Ancients* in this Matter, I have found that the *Glair* and *Yolk* of an *Egg*, beat up together with a little *Oyl of Roses*, will answer all Expectations: It is *Astringent*, *Anodine*, and *Dissolving*: The rest of the *Dressings* I use dry, unleis an *Inflammation*, or some such.

such thing, oblige me to the contrary : For as it is my Way to dress my Patient as seldom as possible, I apply the Bandage dry, that it may be the faster, and less apt to slacken.

Plasters, and Emplastick Medicines employ'd in *Fractures*, stop the *Pores of the Skin*, keep in the *Vapours* that occasion *Itching*, and so oblige to take off the *Dressings* oftner than is expedient ; wherefore I endeavour to avoid whatever may cause that Accident.

Hippocrates us'd to take off the *Dressings* three Days after Application. Many stay till the seventh ; and for my self, I delay it as long as ever I can. Experience has taught me, that it is most advantageous for the Patient not to be dress'd till the *Callus* is entirely form'd, unless the Bands are loosen'd, or some unexpected Accident hath fallen out, such as *Itching*, and disordering of the reduc'd Bones. I could make up a great number of Soldiers that have departed from this *Hospital*, cur'd of *Simple Fractures* of all sorts, according to my *Method* ; but I shall content my self with the Relation of the following Cure..

A Soldier call'd *La Tulippe*, of the Regiment of *Conde*, was brought to this Place, having his right *Thigh-Bone* broken about the middle and shatter'd : This unlucky Accident befel him as he was sleeping upon *Mount Geneva*, under a Tree, which at the same time was cut down, and fell upon his *Thigh*. So soon as he was committed to my Care, I reduc'd

duc'd the Bone by a vigorous Extension, and apply'd a Linnen Cloath dipt in an Egg, beat up with a little *Oyl of Roses*, and a small quantity of good *Vinegar*, upon which I put some *Compresses*, then 3 or 4 pretty long *Rollers*, with some *Splints* of Past-board, encompassing all with a piece of Past-board ; and last of all, the *Junks*, with what belongs to 'em. *Diversions* were perform'd, and a moderate *Diet* order'd. I let the *Dressings* stay on for 20 Days, at the end of which I found the Part in its right and natural Disposition. At this Dressing I us'd *Emplastrum pro Fracturis*, and apply'd the *Bandage* as before, with *Splints* of Wood, and the other things necessary. In 20 Days after I took off the Dressings a 2d time, and found all things to my Satisfaction, and 20 Days more pass'd before I open'd it again ; so that in 60 Days I dreſt him only 3 times, not reckoning the first. He began now to rise and to walk on Crutches, and we continu'd still the Dressings upon his *Thigb*, omitting the *Junks*. In fine, after he had remain'd some time in the Hospital to recover his Strength, he return'd to his Regiment.

'Tis convenient to observe, that in *Simple Fractures* of the *Thigh* we ought always to use on the hinder part, a *Splint* of the breadth of 2 or 3 Fingers, to sustain the Bone, which without this Precaution would be in danger to bend in Hospitals of the Army, where the loose Straw on which the Soldiers lie, is apt to

slip

slip from under them, and so to make Holes or Furrows capable to disorder the jointing of the broken Parts, unless they be supported by something that is sufficiently stiff.

I have no Credit to give to the inward Remedies, which some use for breeding a *Callus*; such as the Juice of *Cowslip*, of *Agimony*, or its Root, taken in Drink; and many others to be seen in ancient Authors. *Nature* is the Architect and principal Framer of the *Callus*, when she is allow'd that *Repose* which is necessary to her Acting; however, I don't disapprove the use of incrassating Nourishment on such Occasions.

In the third Place, as to the Neighbouring Parts, when the *Fracture* is much shatter'd and very painful, it is exceeding advantageous to apply *Defensives* to the Superior Parts, and the *Emunctories*. The Liniment made of an *Egg* beat up with *Oyl of Roses*, and sometimes with a little of that of *Turpentine*, and some *Vinegar*, when the *Contusion* is great, answers also to this Intention, together with Embrocations with dissolving Oyls. Above all, *Diversions* are of great Efficacy to prevent and remove Accidents.

As for the fourth head, it is of great Importance to the fractur'd Member to be plac'd in a convenient Situation, upon which very often depends the good or ill Success of the Cure. In *Hospitals* of the Army, all the necessary Conveniences are not to be found;

but

but the *Ingenuity* of the Surgeon ought to make up that Defect. The greatest Part of the Wounded are only laid upon Straw, which has not Stability enough to keep a Member long in the same Situation; 'tis this Consideration that obliges me, after applying the 3 Bands spoken of above, to use *Splints* in the first Dressing, unless the Pain engage me to defer 'em; and afterward, I make all sure with a 4th Band: I add also the *Junks*, and the *Sole*, with what belongs to 'em, if the *Fracture* is in the *Thighs* or *Legs*; if in the *Arm*, I use the *Sling*; as also, if in the *Fore-Arm*, the Case of *Past-board*; all being well ty'd on, secures the Part in such sort, that there is no hazard of its being disorder'd. This is the Method I use in *Simple Fractures*.

CHAP. XII.
Of Compound Fractures.

*C*omplicated Fractures are very hard to be cur'd. In the second Part of this Treatise may be seen the manner how a good number of such were brought to a perfect Cure: But we must not always flatter our selves with Expectations of the like good Success, chiefly when part of the Substance of the *Bone* is lost. The Youth and good Constitution of the Patient are great Hopes on such Occasions. The Method of *Dressing* gently, speedily and seldom,

dom, saves a great deal of Time, and prevents very many Accidents. Nature, when at liberty, and acting without Restraint, does things very surprizing, and such as we would have judg'd to be impossible.

The Generation of a Callus in a Simple Fracture, is undoubtedly more speedy than in a complicated One : In the first the Heat is kept in and united, and acts with more Strength and Quickness. The Bone being cover'd by the Teguments, is shelter'd from the injuries of the Air : For according to *Fabricius ab Aquapendente*, Part 1. Book 4. Chap. 9, the external Air alters the Bones, and destroys their Natural Temperament : Besides, Nature is not diverted nor disturb'd in her Action by Dissipations or Suppurations. All consists in the Reducing of the Fracture, or rightly setting the Bone, as we have taught in the former Chapter.

From these Reasons a Consequence may be drawn, to justify my Method in respect of Compound Fractures : For by omitting frequent Dressing, and taking Care to hinder the Access of the Air to such Wounds, I prevent all the Accidents it might occasion, as great Supparations, Alterations, Rotteness, Fluxions, Pains, and generally whatever prolongs the Cure, and often makes the Wounds incurable.

In Complicated Fractures, when there is great Suppuration, the Matter must undoubtedly be mixt with the Nutritious Juice of the Bones, which

which from the first moment of the *Fracture* begins to cover the Ends of the Bone, and form a *Callus*. *Tents* and *Dilatets*, with which commonly these sorts of Wounds are fill'd, do by their contract hinder this Work, which ought not to be interrupted. *Long* and *frequent Dressings* give time for the *Air* to penetrate into the Wounds, whereby the Nourishment of the *Bone* loses what was spirituous in it, coagulates, breeds Obstructions, or is turn'd into *Pus*. Moreover, this *Method* not only occasions always *Irritations* and *Pains*, but also deprives the Sick of that *Rest* which is absolutely necessary to 'em.

Fabricius ab Aquapendente, in the eighth Chapter of the same Book, treating of *Complicated Fractures*, where the *Bone* is not uncovered, orders the Lips of the Wound to be join'd together, and to be drest but once in 3 Days. And in the tenth Chapter of the same Book, speaking of *Complicated Fractures*, where the *Bone* is laid open, directs to join the Lips of the Wound by Stitching or otherwise, and afterwards go on with the Cure, as in a *simple Wound*.

I am not therefore the only Person that has drest *complicated Fractures* after this manner. It may be observ'd also, that *Rbasis* and *Serapion* us'd this *Method* in the Cure of *Wounds* of the *Head* with a *Fracture* of the *Scull*; for they say, that *Wounds* of the *Head* must be sticch'd up, even where the *Scull* is broken quite thro'.

If this may be done on such Occasions, much more in complicated Fractures of other parts of the Body. Now, the Stanching us'd by these Authors in *Fractures* of the Scull, was for no other End, but to exclude the Air, which might have prov'd hurtful to the Brain, the Membranes and the Scull.

Galen and Avicenna advises Stanching in such a Case, but Hippocrates forbids it in his Book of *Wounds* of the Head. For my self, I very rarely use it in any part of the Body, tho' I don't disapprove it: But in *Gunshot-Wounds* it can't be practis'd, for many Reasons known to every-body.

Fractures with a *Wound*, are in general very troublesome: But those caus'd by Fire-Arms more than others; and they are also more or less hard to cure, according to the Part wherein they are: For the *Complicated Fractures* of the *Thigh*, which we have had under our Care in this *Hospital*, were not so soon cur'd as those of the *Leg*; nor these, as the Fractures of the *Arm*, and so of others; tho' in all, the same Method was always follow'd.

As to the difficulty of curing those of the *Thighs*, it is often occasion'd by the Inconveniences to be met with in the Hospitals of the Army: For there is difficulty in giving *Clysters* there, where we cannot afford the Accommodations necessary for voiding the Excrements; because wanting ordinarily Servants handy & charitable enough to assist the Patients on such

such occasions, they lie in their Naftiness, and are indiscreetly and violently mov'd; by which means the Cures become tedious and difficult. For we may be sure that *Nature* acts with no less Diligence and Wisdom upon these, than upon other Parts.

I make no question but many Persons will condemn this Way of dressing *Complicated Fractures*, which possibly will appear to be very new; for I own I never saw it us'd before by any. But we ought not to be too forward to affirm, that what we have not seen, is not. There are without doubt many Secrets both in *Nature* and in *Arts*, which wou'd be of notable Advantage, were they known to us.

Those who will give themselves the trouble exactly to follow this *Method*, may extricate themselves from the Errors with which their Minds were prepossess'd against it.

C H A P. XIII.

Of Dislocations.

IT is in the Cure of *Dislocations* that *Art* has the Advantage over *Nature*, because *that* alone accomplishes the Cure without the Assistance of *this*. The *Operation* of the *Hand*, *Machines* and *Bands*, are the Means that *Surgery* employs to reduce them.

Tho' this Subject would afford an ample *Field to Theory*, yet I shall remit the young *Sur-*

Surgeons to such *Authors* as have designedly treated thereon. I will only say, that it is necessary to be thoroughly instructed in the Knowledge of the *Bones* and *Bandages*, and that, if possible, we must not lose one minute of time to restore the Parts that are dislocate, before the *Accidents* supervene, that oftentimes hinder the *Operation*. For the Head of the *Bone* that is out of its place commonly presses on nervous and sensible Parts, and sometimes squeezes together the Vessels that carry the Blood for the Nourishment of the Parts, which occasions a kind of *Palsie* and *Atrophy*, and sometimes a *Fluxion*: Besides, the Cavity of the receiving *Bone* may be fill'd with the *Synovia*, or Humor that moistens the Joints, which if it be coagulated there by some Acid, will hinder the Head of the *Bone* to go into that Place from whence it came out; in which case we may reckon the Replacing of the *Bone* to be impossible. Wherefore, we ought at first to employ all our Care to procure its Reduction.

The Instruments necessary to reduce *Old Luxations*, or such new ones as require great Force, are not all to be found always in Hospitals of the Army; but the Hands of Servants, and the Ingenuity of the Operator, ought to make up that Want as much as possible.

Guy de Chauliac, Fabricius ab Aquapendente, Pareus, and many others, have sufficiently explain'd the manner of Reducing Dislocations.



A young Surgeon ought to omit nothing that may conduce to his accomplishment herein; for 'tis by these simp'le Operations the Vulgar discern the Skilful from the Ignorant, because these sorts of Performances are altogether Chirurgical, and require only the Dexterity of the Artist to accomplish 'em.

I have found by Experience, that an Egg beaten up with *Oyl of Turpentine* and a little *Vinegar*, is very helpful to the laxated Parts to which it is apply'd; nay, that it is a Remedy sufficient to answer all Intentions. *Aromatick Wine* may be us'd when this can't be had. If your Design is only to strengthen, the Plaster for Fractures will do the businss.

Bleeding, Clysters, and a convenient Course of Diet, ought not to be neglected in great Laxations, attended with *Contusion*. These Remedies often prevent being surpriz'd with Accidents, and remove 'em when they happen.

C H A P. XIV.

Of the Relaxation of the Joints.

Soldiers, who commonly lie on the Ground during the Campaign, in very severe Seasons, are liable to have their Bodies stuff'd with superfluous Humors, wherewith all the Parts in general are soak'd; but in a special manner they very often fall upon the Joints,

where softening and relaxating the Ligaments that kept them fast, they do thereby occasion Laxations of the Parts.

This kind of Distemper is very hard to be cur'd, and will scarce yield to Remedies; we have had of 'em under our hands in this Hospital, which have occasion'd us a great deal of Trouble, and but little Credit. *Hippocrates* in such Cases advises the use of the *Actual Caustery*, and *Galen* after him is also for the same Operation, in order to drain and consume the slimy and watery Humors, strengthen the Skin, and fasten the Joint.

Hippocrates for this purpose uses a Rope of raw Flax, which being set on fire, yields a Coal like that of the Match us'd in Armies. And *Aetius*, according to *Archigenes*, did it with the Roots of *Fallers-weed* and *Birthwort*, probably to render the Operation more gentle. 'Tis perform'd on the place where the Head of the Bone bunches out.

This Remedy is rude; we never use it in this Hospital, because it frightens the Patient: Nevertheless these Distempers are sometimes so painful, and withal so obstinate, that those who labour under 'em willingly submit to any thing to be releas'd therefrom.

Fabricius ab Aquapendente relates, That after he had in such a Case, to no purpose, us'd very many things, the Patient was cur'd with a Plaster of a certain Herb, which he believ'd was *Hearts-ease*, that was applied by a Quack.

As for my self, tho' I don't disapprove the Way us'd by the Ancients in this Case, yet I am of opinion, that it ought not to take place till more gentle Methods are try'd. The course we us'd to take at first, is to try whatever may heat, cut, dry, and strengthen. The *Oyl of Lavender*, the *Fat of the Mountain-Rat*, and *Spirit of Wine*, or the *Queen of Hungary's Water*, made up in form of a Liniment, and apply'd very warm, give great assistance in such Cases; to which may be added a little *Oyl of Turpentine*, which attenuates and opens the Passage, and so makes way for dissolving and drying Medicines.

But when I find these Remedies ineffectual, I use such things as irritate, *Vesicatores*, and caustick Herbs, such as *Spurge*, *Celandine*, &c. which, by exasperating the Pain, may cause a Fluxion upon the Part affected, that so the Matter being after digested, and ripen'd by a Fermentation, all may be happily ended by an *Abscess*; as it sometimes falls out.

When we have brought things to this pass, we must not fail, without delay, to restore the *Bones* into their *Cavity*, and to fortifie the Joint with *Aromatick Wines*, quicken'd with *Spirit of Wine*, or else with *Man's Grease*, and a little of the *Queen of Hungary's Water*, mixt and apply'd hot; and generally we may for this purpose use any thing that may strengthen the *Member*, and waste the *Moisture*. In the mean time, the Part must always be suppor-

ted with a good Bandage, and surrounded with Compresses and Bolsters, to command the Bone, and keep it fast in its Place : Moreover, the Patient must be very careful to keep himself quiet, and must observe a Drying and Attenuating Course of Diet.

C H A P. XV.

The Conclusion of the Third Part ; with some very useful Remarks.

MY principal Design in this little Treatise, being to introduce, for the relief of *Wounded Persons*, a gentle, speedy, and easie Way of curing their Distempers, I have endeavoured to confirm the same, as much as lay in my Power, by *Reason* and *Experience*. I am not ignorant, that this Part of *Surgery* which concerns Wounds, does not exhaust its Bounds, and that I have only slightly touch'd on other Things, that are of no less Importance.

My Intention was not to transcribe from other *Authors*, and therefore I thought it enough, superficially only to declare my Thoughts of the other Parts of *Surgery*; wherein I have likewise confin'd my self to that which is most common, and most necessary, and was withal most particularly known to me, nor being willing to speak of many things about which I had nothing new to advance. *I think I have done what I design'd, and am ambi-*

ambitious of nothing else, but that my *Intention*, which I have sincerely declar'd, may have all the Success I could wish it.

The Course I take to prevent the Scaling of *Bones*, explain'd in the first Part of this *Book*, I learn'd from *Experience*; I hope also it will be found very useful and necessary, in dressing *Wounds* where the *Bone* is uncover'd.

I drew also from the same Fountain, the manner of Dressing after the *Operation* of the *Trepan*; and yet I doubt not but it will have the Fate to be condemn'd as new: However, I will not spend Time in anticipating the Objections of others, by answering them beforehand: For whatever might be said in commendation of the *Plate*, which was never us'd by any before me, would only prove an Inducement to excite the Criticks to decry it.

Experience and *Reading* have inform'd me, that the *Air* is a mighty Hindrance to the Cure of Wounds; and I have endeavour'd to find out an easie Way to hinder its Access, especially in Wounds where the *Scull* is cut: For 'tis evident, that the most part of the Accidents that attend such Wounds, are occasion'd only thro' the little Care taken to keep off the Assaults of the *Air*, which are promoted by the Custom of long and frequent Dressings.

I have seen Surgeons spend whole Hours in dressing *Wounds* of the *Head*, accompany'd with a Fracture of the *Scull*, to loosen, break, or cut off the Splinters, or some Piece of the

Bone, which ought never to be done, unless we are very well assur'd that they prick the *Dura Mater*.

There are many who think they have sped well, if at each *Dressing* they can but extract some little bit of broken Bone, which they carefully preserve to shew to all that come, thinking thereby to gain Credit, and to raise their Reputation by that which ought to be condemn'd, and often costs the Wounded Person his Life.

A very famous Officer, not long ago, experienc'd the fatal Effects of this cruel Method; for having had his Scull broken by a Bullet, whereby he was in a manner trepann'd, without hurting the *Brain*, or its *Membranes*, or occasioning any dangerous Symptom; some Time was unadvisedly spent twice a Day, in loosening and pulling away forcibly little Portions of the Bone (which Nature would easily have separated) as supposing that afterwards, which yet was impossible, they might chance to prick the *Dura Mater*: By this Method the *Dura Mater* and the *Brain* were alter'd, and visibly mortify'd; so that he dy'd on the Eleventh Day of his Wound. I was indeed call'd to give my Advice, after his Condition was desperate, but all I could do in this Case, was to give him notice of his approaching Death.

Many Surgeons, thro' a vain Ostentation, spend all their Life, and exhaust their Diligence, in unravelling all the Secrets of the new Discoveries.

is in Physick, and in qualifying themselves discourse accurately thereon, contemning the Opinions of the Ancients; while in mean time, they remain in an entire Ignorance of the Practice, notwithstanding all Science. If these Men were as desirous e knowing, as ambitious to appear so, would take another Course: And nor, nning themselves only to Reasoning, and ew their Wit in Consultations, neglect to ove a good Method.

is not enough to understand the Nature Difference of Wounds, and to know the e of Accidents that befall them, nor yet ntly to explain them, by Reasons purely dative and Chymical: We must join to Theory, which is indeed very useful and lary, a Method of Curing and Rooting out empers; which is to be look'd on as the most ffaty Part of Surgery: But it is rare for who addict themselves wholly to Rea- g, to have such regard for Practice, as quite it to Perfection, and to abandon own Maxims to follow others that are ary to 'em. Wherefore, I have address'd little Discourse to young Surgeons, who possibly reap some Advantage from it, as g not incapable of the good Impressions desires to make upon them.

I am not desirous that the Newness of this od, should either engage them to follow t oblige them to reject it; but only wish

that they may put it to a *Tryal*, in order to make a true Judgment: For every reasonable Man ought wisely to inform himself of the Truth of Things, and to examine their Consequences, before he positively gives his Judgment. Nothing is more easie for one, than to pass a *Verditt*; and nothing more difficult than to *Judge aright*.

I am convinc'd by Experience, that it is dangerous to credit the Testimony of others. The wrong Judgment made on a *Wound* that one of our most famous Generals receiv'd, October the 4th 1693, being the Day of the Fight of *Marsells*, and my easiness to rely on the Fidelity of another, and on the Report made to me the Day after the first Dressing thereof, had almost cost him his *life*. The *Wound* was deep, and made by a large *Bullet*, and was dress'd at first as if it had been only a simple one, with a great quantity of *Lint*, whereof a great part was lost and fix'd in the depth of the *Wound*: However, it happen'd very fortunately, that it was driven out by the *Matter*; but it left behind it, in the place where it was hid, a considerable Mortification, which gave occasion to make great and deep *Incisions*, whereby a *Fracture* was discover'd. Prudence hinders me to declare more at length the Circumstance that accompany'd this Cure, to which M. *Dalibour*, Master-Surgeon sworn at *Paris*, and Surgeon-Major of the *Horse of the Household*, an able and experienc'd Man, was

was call'd to give his Advice. In a Word, after many Accidents, all was brought to a happy Conclusion.

It is therefore absolutely necessary for a *Surgeon*, who is careful of his Reputation, to search the Wounds himself which were not dress'd by him at first, in order to discover their Nature, and know their Extent. This was not the only Person who, in the Day of that Fight, experienc'd the Inconveniency of being dress't at first in a Hurry. I have, for good Reasons, not mention'd several other Cases not much differing from the former, that occur'd on the same Occasion, upon which there were many dress'd in that Quarter, that was assign'd to the Body of Reserve, belonging to our Army.

In this Book, and particularly in the 2d Part thereof, may be seen after what manner I have brought to a perfect Cure a great number of *Wounds*, of all *Kinds* and *Qualities*, with much *Ease*, small *Charge*, and with simple *Remedies*, which are no less useful to the *Rich*, than convenient for the *Poor*.

The great Charges ordinarily laid out upon the Cure of *Wounds* sometimes involve the Patient, after the Cure is perfected, in Evils no less troublesome than the former: The *Wounds* are fill'd and clos'd up, but the *Potkets* are open'd and drain'd. That Person, of whom I spoke in the 25th Chapter of the 2d Part, before he came under my Care,

had a Bill of Three hundred and seventy six *Livres* brought him by the Apothecary, for Medicines furnish'd by him ; when yet, after all that Expence, there was no appearance of a Cure.

The Credit of a *Surgeon* does not consist in emptying the *Shops* to Cure his *Patients* ; On the contrary, we ought rather Christian-like to be saving of the Money of those, who put their very *Person* and *Life* in our Hands : And if they chance to prove so ungrateful, as to deny us what we have deserv'd, after such a good Deed, we may expect our Reward from *Heaven*. We ought not to be bribed by the consideration of a mean Interest, to abandon the Fidelity wherewith we ought to endeavour the speedy Cure of our Patients. If a Patient is destroy'd by unexpected Accidents, when the Cure is delay'd on a mercenary account, the Surgeon, under whose Care he was, becomes guilty of his Death.

I have seen many Persons of Note, whom I won't name, who passing through *Briasson*, eight or nine Months after the Battle of *Marseils*, wherein they had been wounded, were either Fistulous, or very far from being compleatly Cur'd.

Nevertheless, that I may not rashly blame those who had these Persons under their Care, I am willing to believe, that the tenderness of their *Constitution*, their ill *Temperament*, or the unwholsom Air, which very much

much conduces to continue the Wounds, occasion'd the tediousness of these Cures, which in other Persons and Circumstances had been perfectly finish'd in two or three Months at most: But I can't restrain my self from saying, that the Tents, as well as the frequent and painful Way of Dressing, so much in Use, are sufficient to cause all these Accidents, and to hinder the Cure of Wounds: And this is what makes Surgeons hated, and Surgery chargeable.

In this little Work, I have done what I could to shew, not so much by Reasoning, as by Examples and Authority, that Nature has the greatest hand in curing Wounds, or to speak more truly, that she is the principal Worker therein: But I leave it to the performance of more delicate Pens to celebrate her Praises, and to publish her Excellencies, contenting my self to admire her Wonders, which are no less unaccountable than they are surprizing.

The Year 1686, afforded me an Occasion wherein it appear'd, that Nature ever acts for the Preservation of the most noble and the most perfect of her Works. A Soldier of the Fort of Miraboue, which parts the Valleys of Lucerne from Queras, having rob'd his Captain, was pursu'd; and finding no other Way to escape, he threw himself down from the top of the Walls upon the Rocks, where falling on his Feet, they were not only put out

el Joynt, but each of them were Fractur'd with a Wound: He was taken, and brought to the Fort, where there was no Surgeon, by reason of the smallness of the Garrison.

He lay 4 Months on Straw, without any Relief but Bread and Water; during which time his Feet were gangreen'd, and soon afterward entirely mortified.

But, what is extreamly surprizing, round the lower part of both the Legs, a little above the Ankle, Nature her self form'd a certain Wreath or Roll, which stopt the Progress of the Mortification, so that what was beyond this, was abandon'd to the Fury of the Spinae-culus, while whatever was above these Rolls was free from Blemish.

He cut off the Right Foot himself by the Joynt, with a little Pocket-knife, without either Pain or Bleeding; and because the Putrefaction occasion'd an intolerable Smell over all the Fort, by reason of the excessive Heat, he was sent to our Hospital at Lucerne.

By the way he lost a good part of the other Foot, which came away of its own accord; and notwithstanding the contagious Sinell, which as Carrion he dispers'd in all the Places where he pass'd, and also the extream Heat of the Season, the Mortification did not pass over the Bounds that Nature had given it; only these Wreaths that we mention'd above were considerably encreas'd in Bulk by the way.

After he had recover'd his Strength, by the Assistance of good Cordials, some Wine, and Victuals, I cut off that appear'd to be entirely mortify'd, not sparing the highest places of the *Rolls*, which cast an insupportable Smell: I let him rest till the Morrow, and then cut off one Leg, and the other the Day after: For the Ends of the *Tibia* and *Fibula* were altogether rotten and uncover'd. Finally, no other Accident happen'd during the rest of the Cure, which was comp'cated not long after.

This wonderful Example is sufficient to evince, that the want of *Art* is oftentimes supply'd by *Nature*. This may further appear also by what follows, it being a very strange thing that happen'd at *Pignerol*. M. de la Place, Captain in the Regiment of *Barois*, was wounded with a *Bullet* at the Battle of *Marseils*, that enter'd at the middle and hinder-part of the *Fore-arm*, and came out at the lower and fore-part of the same, breaking the *Cubitus* in its passage. He was dress'd by M. *Malinus*, a Surgeon-Major belonging to the Army in *Italy*, and Master-Surgeon of *Lyons*, very skilful in his Employment.

This *Wound* was attended with some troublesome Accidents: For together with a continual *Fever*, an *Abscess* was form'd by a collection of Matter, which was extended over all the *Arm* and *Fore-arm*: But as they were preparing to make an *Incision*, the wounded

Per-

Person was seiz'd with a great *Loofness*, which restor'd their *Arm* and *Fore-arm* to their natural State. This unexpected *Accident* being follow'd by so surprizing an Effect, oblig'd his Surgeon to take a view of that which the *Patient* had voided, and it was found to be the *Matter* of the *Abscess*, without any thing else, save some little *Excrement* that remain'd unmix'd therewith: Moreover, as new *Matter* gather'd, it was voided again by *Stool* in a little time after. In fine, the *Wounds* being compleatly cur'd, the *Loofness* ceas'd, because that was remov'd which occasion'd it.

Perhaps the *Matter* was taken up by the *Veins*, and by means of *Circulation* carry'd to the *Mesaraicks*, and thence empty'd into the *Guts*: This I only propose as an uncertain *Conjecture*, all other ways being to me unknown: I willingly leave it to the *Learn'd*, to be explain'd according to their different *Apprehensions*. But that which induces me to think this *Way* has some Appearance of Truth, is, that this *Surgeon* solemnly protested to me, that at the beginning of the same Campaign he had under his Care a *Captain* who had a *Wound* in the *Thorax*, that pierc'd into the Substance of the *Lungs*, and was accompany'd with all the *Accidents* common to such kind of *Wounds*; all which, nevertheless, where remov'd by opening a *Vein* in the *Arm*, which was done with an intention to let *Blood*, instead of which nothing came out by the *Orifice* made in the *Vein* but

but *real Matter*, sent from the *Breast*. Many Persons of Credit, who were Eye-witnesses, assur'd me of the Truth of this *Prodigy*.

Fabricius Hildanus, Chap. 3. Obs. 39, relates, that an *inveterate Ulcer* in the *Leg*, with a *Fistula*, that was rashly cur'd, was follow'd by a *Pleurisie*, in which the *Patient* voided at the Mouth a *Matter* like to that which us'd to come from the *Ulcer* of the *Leg*.

It were an easie matter to adduce an infinite number of Examples almost alike, wherein *Nature* appears to have ~~oversp~~ pass'd her self, either in preserving Parts afflicted, in easing those over-charg'd with Humours, or, in fine, in uniting such as are divided.

In the Year 1686, one *Lansaveche*, Quarter-Master of the Dragoons of *Verue*, in the War against the *Vaudois*, was wounded by a large *Bullet*, in the upper and side-part of the *Hypogastrium*, and by all the Accidents it appear'd that the *Colon* was torn by the Bullet: There came out of the *Wound*, for more than the space of two Months, an *excrementitious Matter*, during which time he suffer'd grievous Pains: At length *Nature*, without any Assistance, clos'd up the *Wound* of the *Gut*, tho' the Bullet was lost; and he left *Lucerne* at the breaking up of the Hospital, which was three Months after his receiving the Wound.

Hildanus has a like Observation of a certain Man who had one of the great Guts open'd in the Operation of the *Bubonocele*, which

which clos'd up of its own accord. In fine, as we are oftentimes surpriz'd by things that could not be help'd, but either from the *Bounty or Caprice of Nature*, so also extraordinary things fall out in *Wounds* by an Effect of Chance, as well by reason of the Posture Men are in when they receive their *Wounds*, as because of the *Things which wounded 'em.*"

In the same Year 1686, one wounded with a Shot was brought to the Hospital at *Lucerne*: The *Bullet* enter'd on the lower and middle part of the *Os Occipitis*, and grazing upon the *Temple-bone*, came out under the *Right Ear*, carrying away part thereof. Tho' it plainly enough appear'd, that the *Bullet* had touch'd the *Scull*, yet the *Wound* was dress'd as a simple one, because no Accident appear'd; and it was left to the Care of the Servants. Thus three days past, during which the Patient was troubl'd with a Restlessness, complaining only that he could not put himself in an easie Posture, which was not much minded: Nevertheless, he dy'd on the 4th day of his *Wound*, with all the Symptoms that usually attend Sleepy Distempers.

The unexpected Death of this Man oblig'd me to open his *Scull*. I found him wounded with a small *Wedge of Lead*, which striking against the middle Ridge, on the lower part of the *Os Occipitis*, at the time when his Head was bow'd down, was cut in two by the sharp edge of the Bone; one part had slipt on the *Temple-bone*,

bone, as was said, and the other enter'd the cavity of the *Scull* on the same side, remaining fix'd between it and the *Membranes*, which were cut and press'd thereby. His fellow-Soldier, in the same day's Action, had two Wounds by one Shot ; the first a little below the *Yoke-bone* on the left side, and the other in the middle part of the right *Hypochondre* ; yet he was compleatly cur'd in 12 days by a moderate Suppuration, and no Accidents.

I have seen many Wounds no less strange than these; but, in order to make a right Judgment in suchlike Cases, the nature and figure of the wounded Part, the Posture of the Person when he receiv'd the Wound, and the figure of that which made it, must all be very carefully examin'd beforehand. Now, the ready apprehending all these Circumstances, with many others necessary to be known, in order to Success, can't be attain'd by *Surgeons* without great Study, Practice, and Diligence.

The Ascent whereby we mount the *Temple of Esculapius* is no less difficult and steep than that by which we rise to *Mount Parnassus*. 'Tis almost impossible to get up without making some false steps. However, 'tis but reasonable to think, that those who were employ'd in *Hospitals* and *Armies* during the late War, by the innumerable different Cases which it afforded, have discover'd things very surprizing, and no less useful in Practice, and have often seen the
strange

strange Ways Nature takes to throw off what offends, by healthful *Evacuations*.

Such as impart to the Publick their Observations and Experiences, which are the Fruits of their Diligence and Care, have deserv'd well of Mankind. Many *Surgeons* there are, who have not the advantage of Occasions to accomplish themselves in this sort; and of those that have, few are so charitable as to publish what they've seen and remark'd *extraordinary*.

When a Man does not communicate his *A-
ttainments* (by Writing) to the Publick, let his *Endowments* and *Knowledge* be never so great, they are for the most part, if not altogether, buried with him. The *Good* a Man can do, lasts but for a time; but the *excellent Advice* he leaves (in Writing) to Posterity is useful for ever. We had still been in Ignorance, had not the *Writings* of the *Ancients* come down to our hands.

Wherefore I thought my self bound in Conscience (tho' at the hazard of being coademn'd by the *Environs*) to impart to the World my Experiences, that (if possible) I might procure to poor wounded Persons a more speedy Assistance than can be afforded by the common Method. If I shall have the Happiness to succeed in my Design, I shall think my self sufficiently recompens'd for all my Toil, and will praise the Almighty Father of Lights, who by small Means often brings mighty Things to pass.

. *The End of the Hospital-Surgeon.*

The Manner of
Curing all Fractures
A N D
Dislocations
Incident to
Human Bodies,
By the Means of
Bandages.

Compil'd by M. LAWRENCE VERDUC,
sworn Master-Surgeon at Paris.

L O N D O N,
Printed for J. & B. Sprint, J. Nicholson,
in Little-Britain; and A. Bell and
R. Smith in Cornhill. 1713.

The A U T H O R's Preface.

TH E Work I here undertake is of no small Consequence, as being the Province of that great Physician of Greece, Hippocrates. 'Twas he who first taught us to wind up and roll the Parts of Human Body, and has left it on publick Record, that the Bandage is the most necessary and most certain Remedy that Surgery can boast of. Now this engag'd me to compile and publish a Treatise upon Bandages, to the end that those of our Profession may with Constancy and Diligence pursue the Method of preserving the Union of the Parts in the Division of the Bones; of procuring the Union of the soft parts by Uniting Bandages, and of healing Ulcers by Expulsive Bandages.

This is the whole of my Design: And I can justly say, with all the Sincerity of my Heart, that I have laid aside all manner of Passion; so that I hope I am conducted by the true Light, that flowed from that great Genius of Greece, in the Explication I have given at the beginning of the general Doctrine of Bandages: After which, I treat of Fractures and Dislocations, and shew both the Signs to distinguish, and the Means to redress them; with a particular Description of the Bandage that's proper for each of these Disorders; of the length and breadth of every Roller, and of the figure of the Plasters, Compresses, and Pastboards.

This I have pursued with all the Order and Method I could possibly think of; it remains only for me to wish, that all may tend to God's Glory.

The

The Way and Manner of curing all Fractures and Dislocations incident to Human Bodies, by the Means of Bandages.

C H A P. I.

The Definition of a Swath-band or Fillet, and its Differences.

B eing long importuned by my Scholars and Auditors to publish a *Treatise of Bandages*, I now comply with their Request, and shall here endeavour to be as plain and intelligible as possibly I can, that any one may reap benefit from this Performance. We may justly join with *Hippocrates*, in asserting, that Bandages are the most necessary and certain Remedies within the whole Verge of Surgery, this Assertion being back'd by repeated *Experience*; for how many Crown'd Heads have been rescued from the Jaws of Death, both in Peace and War, by the means of Bandages? Who can pretend to undertake any Operation in dividing the Parts, whether solid or fleshy, to stop the Blood and

and save the *Spirits*, without having recourse to these grand Remedies, which are always first us'd?

I could easily enlarge upon the Advantages and Prerogatives of this sort of Remedies, but I chuse to wave 'em, and shall content my self with observing, that *Chirurgical Bandages* fall under a twofold Consideration; and, that those who would understand and use 'em right, ought to know that there are two sorts of *Bandages*, namely, the *Common* and the *Proper*; the *Common* are such as may be apply'd conveniently to several Parts of the Body, and for several Disorders; and that the *Proper* are only applicable to particular Parts, and calculated for particular Disorders.

But before we launch further into the Division of Bandages, 'twill be proper to explain the difference between a *Band* or *Fillet*, and a *Bandage*. All *Bandages* may justly be call'd *Bands*, but all *Bands* are not *Bandages*: For, as *Hippocrates* says, a *Bandage* must be consider'd two ways, viz. when 'tis making, and when 'tis actually made. That is to say, a *Band* or *Swath* changes its Name as soon as it is apply'd to the Part, or when they begin to wrap it round; for then it becomes a *Bandage*, which Title it never bears, but when there's Application in the case.

Now to set this in a clear Light, there are four general Things to be explain'd, which a Surgeon ought necessarily to know. First,

what

what a Swath-Bandage is ; Secondly, from whence the Species and Differences of Bands are taken. Thirdly, what are the Parts of a Band : And fourthly, what Conditions are requisite in a Band.

A Band is defin'd to be a long and broad Ligature, for surrounding, binding, and containing the Parts of the humane Body, and keeping them in a sound State. The three first Words of the Definition relate to a Band in general, and the remaining Words relate to a Bandage. The 3 first Words give us to know, that a Band has Parts, namely, the Body, and the Extremities or Ends. By the Body we understand the middle and thickness of it ; by the Extremities, we mean both the Ends that run out length-ways, and those which run across in a lateral way.

To set the 2d Part of the Definition in a clear Light, we must know in the first place, that there are two sorts of Bandages, one sort are Remedies of themselves, and the other serves only to keep Medicines upon the Part. If this were duly minded, there would not be so many Errors committed, as we daily meet with, for want of due Reflection upon the proper Use of Bandages. The words *Surrounding* and *Binding*, relate either to that sort of Bandages that are Remedies of themselves, and the Word *Containing* relates properly to the Bandages that have no other use but that of *keeping on the Medicines*, and call'd *Con-
taining Bandages.*

Having thus explain'd the Definition of a Swath-band, we proceed to its Differences.

Galen takes the Differences of Bands from five Things, namely, their Matter, Figure, Breadth, Length, and Structure.

The Difference that's most necessary in the way of Practice, is that taken from the Matter or Substance, some being made of Linnen, others of Woollen, or of other sorts of Stuff. For the most part, the Ancients made use of Linnen-Rags or worn Linnen for this Service, especially in the case of Fractures, in which the Part must be ty'd and bound hard; and in our modern Practice, we use it on all Occasions, upon the Consideration that with it we can bind hard, or slacken as we will, that 'tis to be come at more readily than any other thing, that it washes more easily, and that it conveys the vertue of the Liquors to the affected Parts, with greater Facility than any other Matter.

The 2d Difference is taken from the Figure, for some are equally roll'd and gather'd, such as those made use of in Fractures and Dislocations, others are slit and cut into several Heads, such as those for the Head, the Ears, and the Chin; and others again are made of several Rollers of different Figures, gather'd and stitch'd together, such as those which bear up the Breasts and the Testicles.

The 3d Difference arises from the length; for some are long, others short, and others again

again of a midling length. We can't but agree to what *Galen* says, That the length of all Bands can't be ty'd up to one general Rule, in regard they must needs be diversify'd, according to the different Constitutions of Bodies, and the length of the Part affected. Besides, there's a Necessity of having longer Bandages when the Disorder spreads, and deeply affects the Parts, and where the Bandage can't be firm and sure without many Rounds and Convolutions of the Roller ; whereas upon other Occasions shorter Ligatures will do.

As for the Breadth, which gives the 4th Difference, some Swath-Bands are very broad, such as those for the Head, the Breast, and the Belly ; others are very narrow, such as those for the Nose, the Lips, and the Fingers ; and others again are of a midling Breadth, for instance, those of the Arms and the Legs.

Galen says, that we can't confine the Breadth to one general Standard, no more than the Length ; and this Difference or Alteration of Breadth, proceeds only from the Diversity of Age ; for the gradual Growth of a Child from his Infancy to his arrival at a full Stature, compleat in all its Dimensions, of necessity varies the Breadth of Swathes : And to my Mind there can be no general Rule given upon this Head, but what runs upon these three Points, namely, a Child, or a Youth growing up, that requires the gradual enlarging of the Breadth ; a Man of a large Size in all his

Dimensions, both as to Bulk and Height, who requires very broad Bands or Rollers ; and those of a midling Breadth, that is, neither too broad nor too narrow.

This is confirm'd by *Hippocrates*, who tells us, That in order to make a right Use of Swath-Bands, we ought to consider the Breadth and Thicknes of the Parts. *Guidon* alledges, that Bands or Fillets for the Shoulder, ought to be 6 Fingers broad, those for the Thigh 5, for the Leg 4, for the Arm 3, and for the Finger 1. I hope I shall here lay down just Rules for the length and breadth of Bands calculated for each Part ; but you are to understand, that when I fix a Standard for the Shoulders, the Thighs, the Legs, the Arms, and the Fingers, 'tis only calculated for those who are of a mature Age, and an ordinary Size ; the length and breadth requir'd by others, being easily adjusted in Proportion.

Galen takes his fifth Difference of Bands or Fillets from the Structure, for some are woven on purpose in the Form of a Ribbon, of Thread, Woorsted, and the like ; and others are made of Linnen Rags ; and 'tis this last sort that we use now-a-days, because they are of more use than the former.

A Fillet consists of two Parts, viz. the Body and the Extremities or Tails, which I explain'd before, shewing, that the first is the middle and thick part of the Fillet, and the Tails or Ends are four, viz. two longitudinal, and two lateral.

Hippocrates informs us very justly, that a Band or Fillet ought to have 4 Conditions or Qualities. The first consists in the choice of the Matter or Substance of which they are made; the Linnen, for instance, must neither be too new nor too much worn; if it be over-worn, it rends and tears upon the least Occasion, and does not bind the part fast enough; if it be too fresh and new, 'tis too stiff to be pliant, and binds too hard, and causes Pain. So that our Bands ought to be made of Linnen as is of a middling Force and Freshness. *Hippocrates* enjoins farther, that the Bands be Smooth, plain, soft, and light; by Smoothness and Plainness he excludes unevenness, or the least puckering and rising unequally; by requiring Softness, he insinuates, that they must not press, or wring, or wound the Part; a Fineness is requisite to facilitate the Passage of the Liquors thro' its Substance; and the Inconveniency of over-loading the affected Part, makes Lightness a necessary Quality.

The 2d Quality he insists upon, is their Cleanness, and their being clear of all Naustness and Filth. *Hippocrates* does not mean that the Fillets should be apply'd dry, for he orders 'em to be dipt in a proper Liquor in order to mitigate the Pain, and prevent other Accidents, which is chiefly to be understood of grievous Disorders, such as dangerous Wounds, Fractures, and Dislocations, and not of a slight and small Indisposition.

The 3d Quality demanded by our Venerable Author, consists in the right cutting 'em; for, as *Galen* says well, they ought be cut down along with the Thread, and a-cross; for the Linnen that's cut cross-ways is too pliant and slack, and presses down on in the middle of its Body, and not in the lateral Extremities. *Guillemau*, in his Surgeon advises to cut the Linnen cross-ways the design'd for the Elbow, the Hanc, or Shoulder, but that relates only to Compresses and not to Fillets.

The 4th and last Quality enjoynd by *Euripocrates*, is their being free of List or Selvage of Knots, of Hems, and of all manner of evenness; for whenever such Things take place, they lock up and wring the Part so, to cause a Pain that draws down a Flux of Humours.

Having thus explain'd the Difference of Band, with its Divisions, Parts and Qualities, it remains now to account for the Nature of Bandages and their Differences.

CHAP. II.

Of the Nature of Bandages, and their Differences.

A Bandage may justly be call'd the rolling or rounding of Bands round an affected Part, together with the neighbouring and

jacent Parts. A particular Deduction of the different Sentiments of Authors, relating to the Differences of Bandages, would rather perplex than instruct the Reader; for which reason, I choose to go a little higher, and subscribe to the Sentiments of *Hippocrates*, who derives the Differences of Bandages from six Things. First, The Time of the Operation: Secondly, The Simplicity or compound Structure of the Bandage: Thirdly, The manner in which the Parts is bound up: Fourthly, The Place where the Bandage ought to commence and terminate: Fifthly, The Order observ'd in applying the Fillets: Sixthly and lastly, The common or proper Nature of the Bandages.

To resume all these Differences, and explain them in order, we must observe with *Hippocrates*, that with regard to the first Difference drawn from the time of the Operation, we must consider a Bandage while 'tis yet a making, by way of Distinction from one that is already made. For the former there are *three Conditions* requir'd, which are couch'd under these *three Words*, *Cito*, *Tute*, *Zucunde*, i.e. speedily, safely, and dexterously. The first *Condition* implies, that the Work ought to be done with Expedition, that the Bandage and its Appurtenances ought to be in a readiness, and that a Surgeon ought to make all the necessary *Provisions* before he undertakes an Operation of Consequence,

whether it be to stop the *Blood* in an *Aneurisma*, or in the Case of an *Extirpation*. In short, the meaning is this, that in the time of the Operation, or after 'tis over, 'tis not a seasonable time to be then looking for Remedies, or preparing the Dressings, the Patient being thereby expos'd to the danger of his Life. The second Word, *safely*, imports, that in all Operations we must take care not to run the risque of any thing that's avoidable; and the third, viz. *dexterously* or *handsomly*, implies, that when a Bandage is well perform'd, the Surgeon gains Glory, and preserves his Reputation with the Patient and the By-standers. This is confirm'd by *Galen*, in his excellent Precept relating to the Ornament and Perfection of a Bandage; in which he says, That a good Surgeon gains the Esteem of the People, and makes the Patient obedient to his Precepts.

The 2d Difference of Bandages, taken from their Simplicity or Composition, is grounded upon the Doctrine of *Hippocrates*, who says, There are two sorts of Bandages, viz. one single, and another compound: The former is call'd *simple*, or *single*, for 3 Reasons: First, because 'tis made only of one Band or Fillet; Secondly, the Fillet with which the Bandage is made, is a single Fillet, without any thing stitch'd or tack'd to it; and Thirdly, its Rounds and Turns are all simple.

A Compound Bandage is the reverse of the Simple.

Simple ; for oftentimes 'tis made with several Fillers cut and slit into Ends, or has other Fillers tack'd to the principal one, or is perform'd by several Turns and Rounds, different the one from the other.

A simple Bandage is divided into two sorts, viz. the equal and unequal. The equal can only be of one Make or Fashion, that is, round and circular, encompassing the Part as a Hoop does a Cask, without turning or shifting to one Side or t'other. As for the simple unequal Bandages, there are several sorts of 'em, the Number of which is not agreed upon by Authors. *Galen* makes but two sorts ; to which *Gourmelain* adds a third, but in common Practice we make four, viz. the *Deloire*, the *Mousse*, the *Renvers'd*, and the *Creeping*. However, to avoid the perplexing and confounding of the young Students of Surgery, I chose to make but three, by throwing out the *Mousse*, for these ambiguous Words, so often quoted in common Practice, afford no manner of Explication of the thing it self, and serve only to embroil and perplex the Mind, as I have found by long Use and Experience in the Demonstration of Bandages. Besides, the *Deloire* and the *Mousse* differ only in less and more, and consequently do not merit a Distinction, for the former is only a simple unequal Bandage, carried upwards or downwards, so as to leave the fourth Part of the Fillet uncover'd, and the latter is the same,

only so manag'd as to leave but a third Part uncover'd.

The second simple unequal Bandage, is the *Renvers'd*, which we use for the Extremities or Limbs of the Body. It serves to render the Parts equal ; as in the Leg, for instance, by carrying your Bandage from below upwards, and making Reflexions or Plaits under the *Musculi Gemelli*, which make the Calf of the Leg, you make the Leg equal and even. The third simple unequal Bandage, is the *Creeping*, so call'd because it turns round the Part in a Serpentine way, leaving a space between every two Rounds. It serves only to contain and keep on Medicines, without locking up the Part, in Inflammations. For instance ; *Galen* takes the difference of *Compound Bandages* from three things, viz. the Part affected ; secondly, some Accident or other ; and thirdly, the Similitude of the Part. Some Bandages derive their Names from the Parts to which they are apply'd, being call'd, the Eye, the Nose, the Groin, the Breast, &c. Others take their Names from the resemblance they bear of some particular Figure ; and such are the *Lozenge*, the *Creeping*, the *Ditch*, the *Lid*, the *Crab*, the *Sparhawk*, the *Tortoise*, &c.

The third difference of Bandages rises from the manner in which the Part is bound ; for, in regard the Parts of the Body differ very much in their Figure, and are liable to Disorders of different Natures, we can't pretend to

tie and bind up all the Parts after one manner To give an Example ; When we apply a Bandage to a compleat Fracture of the Leg, we begin with a Fillet roll'd up to one Head or Ball ; in a Fracture of the *Clavicula* or Chanel-bone, we begin with a Roller of two Heads ; in applying Bandages to the Eyes, or making a Ligature for bleeding in the Forehead, and several other Cases, we begin with the end of the Fillet.

For a Uniting Bandage, we begin with a Fillet roll'd up to two Heads ; and in Extirpations we begin the Bandage with a Roller of one and of two Heads, as well as in Dressings for the Breasts, for which we use the *Pocket*, or *Heliodorus's* Band. For the Head we use the Bandage call'd the *Cancer*, which is cut into several Heads, so that the body of the Linen covers the whole Head.

The fourth Difference is taken from the Place where the Bandage begins and ends.

That Difference is the most necessary, and of greatest importance in the way of Practice, that is taken from the place where we begin to lay down the first end of the Band, and that where we terminate and fix the other end.

Now, to adjust this matter, we must know, that a Bandage begins at one of these three places, viz. either the Part affected, or else the adjacent Part, or else the Part that's opposite to it. When we make the first Rounds upon the Part affected, we do it upon three Consi-

Blood, we ought to make several Tu-
Rounds about the affected Part, and I
Bandage toward the upper parts, tha-
wards the Root or Head of the Vessel
ought to be practis'd (continues Gale)
all the parts of the Body, excepting th
bones of the Brain. In like manner,
sing Contusions, we ought to begin t-
dage upon the bruis'd Part, with inten-
tent a stagnation or flux of Blood, an-
mation, and a Suppuration. This is
enjoin'd by Hippocrates. " Let the
place be where it will, says he, wheth-
er Suffusion of Blood, a Contusion, a F-
or a Tumor, provided there is no
mation, we ought always to begin o-

The third Design is to keep the Medicines upon the Part ; in which Case we call the Bandage a *Contentive Bandage*.

When we begin the Bandage upon the neighbouring Part, we do it likewise for 3 Reasons.

The first is, the Reduction of dislocated Bones ; if the *Condylus* of the *Tibia*, for instance, which is articulated with the Thigh-Bone, be dislocated to the outside, we must lay the first Cast of the Fillet or Band on the inside, and roll it hard round the outside, where the Dislocation happen'd, and end the Bandage at the Place from which the Bone was dislocated. Such are the Orders of *Hippocrates*. The second Case that requires the Commencement of the Bandage upon the adjacent Part, is that of Ulcers, which demand an *expulsive Bandage*. If an Ulcer, for instance, is seated in the Leg, a little above the Ankle, we begin to wind the Roller under the Sole of the *Foot*, and so mount upwards by *Doloires*, i. e. such Rolls, as leaving the 3d part of the Band uncover'd, making Reflections or Plaits till we come at the Calf of the Leg, and then carrying it up to the Garter-place, where we make a stronger Constriction, and so finish the Bandage. This we call an *Expulsive Bandage*, which serves to dislodge and expel the Humour that sculks in the *Sinus's* of the Ulcers.

The third way of binding, is that in which we begin the Bandage on the opposite Part,

whe-

whether the Wound be on the fore or the hinder part of the Body. If the Wound is in the middle of the Forehead, for instance, running length-ways, we must re-unite the Parts with a Roller of two Heads, perforated in the middle, and begin the Bandage by applying the middle of the Roller to the Nape of the Neck, after which we draw the two Balls or Heads, one in each Hand, from behind, forwards, and pass one of the Balls or roll'd Heads through the Slit in the middle of the Roller, so as to make the middle of the Slit to fall directly upon the Wound, and so continue to make as many Rounds as are needful for re-uniting the divided Parts.

The fifth Difference of Bandages, is taken from the Order observ'd in simple Fractures, which requires a compleat Number of Bands, Compresses and Past-boards. The under Bands, which are call'd *Hypodesmides*, from lying under the rest, are first apply'd; and that in such a manner as to make the first under-Band lie directly upon the Fracture, and make three Turns round it. For Example: If the *Tibia* be fractur'd; and the Bone cast to the outside, we must begin the first Cast of the Band from the inside outwards, making three Rounds upon the Fracture. In like manner, if the *Tibia* be fractur'd so as to throw the dislocated Bone to the inside, we make the first Turn from the outside inwards, and cast three Rounds about the Fracture,

ture, and so rise with *Doloiers* and renvers'd or reflected Rounds, and terminaté at the Garter. This Band ought to be three large Fingers broad, or more, in proportion to the thickness of the Leg, and three Ells long. The second Under-band ought to be three Ell's and a half long, and as broad as the first. With this we make two Turns round the Fracture, casting them the same way as with the first, and then run it downwards under the Sole of the *Foot*, endeavouring not to cover the Ancles, after which we carry it up again with fewer and flacker Turns than those of the first.

Now this second Band differs from the first in three Particulars. 1. The Length, because it goes a greater Way. 2. Its Turns round the Fracture, there being fewer and flacker. 3. The Distance or Interval left between its Rounds, which is larger than in the first, that it may reach up to the Garter, where the first ended, as *Hippocrates* informs.

Hippocrates and *Galen*, whose Sentiments I follow in this small Treatise, without perplexing my Reader with the Opinions of other Authors, who muster up a great Number of Bands for Fractures. These two great Masters, I say, inform us, That the Bandage call'd the *Epidesma*, or the upper Bandage, is accomplish'd with two other Bands, besides the two mention'd but now: And here I shall content my self with shewing the difference
be-

between the first and the second of these upper Bands ; for when I come to speak of the Fractures of the Limbs, I shall omit nothing relating to the Longitudinal and Transverse Compresses, and the other Dressings applied after the Application of the four Bands.

The Application of the two under-Bands is already accounted for : As for the two upper Bands, or the *Epidesmides*, if we mean to recover the natural Situation of the Muscles, from the inside to the outside, we must begin on the outside to roll the first of 'em upon the fractur'd Part, making only one round, and then turn upwards, and end with the two *Hypodesmides*.

The 2d *Epidesmus*, or upper Band, must be applied above, and brought downwards to the Place where the first commenc'd, casting the Turns from the same side with the former.

These two differ from one another in this, that the Rounds of the first, which run upwards, are closer and more numerous than those of the second.

Hippocrates and Galen shew, that this upper Bandage serves for four Uses. First, it keeps the fractur'd Bones tight, and hinders 'em to disjoin. Secondly, It strengthens the under-Bandage, and keeps it firm. Thirdly, It keeps the Compresses in their proper Situation. Fourthly, It hinders the Past-boards to gall or bear too hard on the Parts. Of Splints us'd in Fractures I shall have occasion to speak hereafter.

The

The Sixth and last Difference of Bandages, is taken from the Parts to which they are applicable. Pursuant to this Difference we call some Bandages *Common*, and others *Proper*. The *Common* are such as may be applied not only to one Part, or for one particular Disorder, but to several Parts of the Body, and that upon several different Disorders. The *Proper* Bandages are such as are only suitable to certain particular Parts and Disorders, and are not proper in any other Case.

The simple common Bandages are either equal or unequal, under or upper Bandages, with Wounds, or without, Incarnative, or Expulsive or Retentive. As for the Bandage call'd *Rhomboides*, I shall take but little notice of it, for tho' it be listed into the Number of common Bandages, it does but little Service, and is not us'd either in Hospitals or elsewhere, nor to mention that it can't properly be applied to any part but the Feet; so that 'twould be needless to spend time upon it; however, I shall shew its Use, as well as that of all the other common Bandages in the proper Places. In the mean time I can't but remind my Reader, that some Bandages are Remedies of themselves, and others serve only to keep the Medicines upon the Parts. Those which are Remedies of themselves, are either *uniting*, *dividing*, *expulsive*, or *attractive*. The *Union-Bandages* are us'd on several Occasions, such as *Fractures*, *longitudinal Wounds*, and

the like. The disjoining Bandages are us'd in Burnings of the Fingers, and in Burnings of the Chin, to prevent its sticking to the *Sternum*. The Expulsive Bandage is us'd in Ulcers, to squeeze out the Matter retain'd in the Sinuosities. The Attractive Bandage is of use to recall the Spirits to a decay'd Part. A Contentive serves only to keep the Medicines upon the Part; and this is the only sort of Bandage that the Neck can conveniently bear, by reason of its being employ'd in the two most necessary Actions of Life, viz. Respiration and Deglutition.

Having thus explain'd the Nature of Bands, with their Differences, Parts, and Conditions, together with the Differences and Uses of Bandages, I come now to treat of the Application of Bandages.

C H A P. III.

Of the Application of Bandages, both Common and Proper.

I Here propose to lop off a great many Bandages that are of no Use in Practice, such as the *Riombus*, the *Demi-Rhombus*, the *Tolus* of *Diocles*, the *Scafā*, the *Cancer*, the Bandage with four Heads, or six Heads, or Eight Heads, the Royal Bandage, the *Bolognese*, and the Web of *Perigeuna*, which are all common Bandages of the whole Head,

ex-

excepting *Diocles's Tolus*, the *Demi-Rhombus*, and the *Scafa*, which are proper Bandages. The *Scafa* is proper or peculiar to the bleeding of the Vein in the Forehead, the *Demi-Rhombus*, and the *Tolus* of *Diocles*, to Wounds about the Ears. In regard I am not to mention these hereafter, 'twill be needless to shew the manner of applying 'em ; and forasmuch as we have other Bandages that may be apply'd to the whole Head, and to any of its Parts, I shall content my self in giving a clear Explication of those that are serviceable.

I begin with the great *Kerchef*, which ought always to lead the Van of the common Bandages of the Head. We make it thus : We take a Napkin, and fold it lengthways, in such a manner, that the two lower Ends run two large Fingers breadth beyond the upper ; then we double the Napkin four times, so that the Thumbs may be within, and all the Fingers out, and the right Hand hold the fcur Ends or Heads. This done, the left Hand takes hold of the other side of the Napkin thus folded, at the distance of two Fingers breadth from the Selvage ; and a Mark ought to be made there with the Nail of the Thumb of the right hand ; after that, let the right Hand open or turn out the Napkin, the left Hand continuing to keep hold of the Plait or Fold till the Napkin is quite spread and unfolded. Then with your two Hands take hold of the Napkin under the broadest Selvage, keeping your two Thumbs out,

out; the one opposite to the other; then apply the middle of the Napkin to the Head, in such a manner, that the Root of the Noose may fall directly between your two Thumbs that hold the Cloth; which must be apply'd to the Root of the Hair, and with the Palm of the right Hand you must take care it does not give backwards; with the left Hand give one of the upper Heads to one of the Assistants, or to the Patient, to hold: This done, place your left Hand where the right one was, and giye the other Head to some-body to hold on the other side. The two Heads being held opposite to the Chin, the Surgeon takes hold of the lower Heads by the Extremities, and pulling them equally on either side, forms 'em into the figure of a Goose's Foot, which he fastens with a Pin behind the pit of the Neck: And to give the *Kerchof* the last degree of Perfection, he puts in his Thumb at the upper part of the Sinuosity, and then pulls from before backwards up to the top, with intent to make the P'arts equal that compose the Goose's Foot.

Now, to know what the Sinuosity is, we must consider, that the great *Kerchof* is made up of six parts; namely, four Heads, two behind, that fix at the Nape of the Neck; and two before, that fasten under the Chin; and that which hangs down upon the Breasts, which is no more than the Cloth plaited, is call'd *the Sinuosity*. To make up the six Parts, *this Sinuosity* is double, one on each side, of

which

which we make the Cap, by turning each of them up in a strait Line near the lesser *Canthus*, the outer corner of the Eye, and making them joyne equally together, or meet one-another in the Crown of the Head. Then you are to make the rest of the Napkin very even, without any Plait. And this is what we call the great *Kerchef* with its Cap.

The Second *Kerchef*, properly so call'd, is made of a Handkerchef laid cross, which folded in the middle, is form'd into four very equal Leads, two before and two behind; the Cloth folded again into four Doubles, equally in the middle, where a Mark is made; then you take hold of the Handkerchef with both your hands, keeping all your Fingers on the under, and your two Thumbs set one against the other on the upper side of the Cloth: And thus you apply it to the Head directly, at the Extremity of the middle part of the Forehead, each Head being pull'd on each side with one hand; then you run along with your Thumbs which are still above the Cloth, and the other fingers under it, gliding them along the Skin to the Nape of the Neck, where each Hand lifts its Head, and then the Heads are brought round to the Forehead, where they are made fast with a Pin, without any Plait; the Posterior Heads lying equally one upon the other, being made fast with a Pin on the Crown of the Head, and a Plait being likewise made on each side, which pulls from below upwards,

in order to make the Linnen lie smooth and even, that so it may not hurt the Patient. So much for the two common Bandages of the Head, that are us'd in Practice. The rest I wave, as I said before.

The next in order that deserves our regard is a Sling with four Heads, which is made of a piece of Linnen half a Yard long, and as broad as the breadth of 6 or 8 large Fingers. The Cloth must be folded in the middle of its Length, and about a fourth part of it cut or slit, leaving the rest entire. The Band is applied to the Crown of the Head, the Nape of the Neck, the Forehead and the Chin. The manner of Application is this: Take hold of the Band with your two Hands near the end of what is cut, and apply it cross-ways upon the top of the Head, placing the flat unslit Part upon the Place affected. By this means the upper Heads will fall downwards, and the lower ones will mount upwards crossing the upper, the lower being made fast behind the Ears, and the upper upon the Forehead.

To apply it to the Chin, place the flat entire Part upon the Chin, draw the superior heads downwards, cross them at the Nape of the Neck, and make 'em fast at the Crown of the Head; at the same time make the lower Heads cross the upper, and run upwards along the Cheeks, to be made fast upon the Crown of the Head.

The Forehead has a peculiar Sling, not-with-

withstanding that the Sling with four Heads is common to it and the other Parts. Take a small piece of Linnen, and cut it into four Heads or Ends, leaving no more uncut than just the breadth of the Forehead. In this Case the Heads cross one another, just as above. These Slings are very proper in hot Countries, where 'tis not proper to load the Head; and they are of use in all the Wounds of the Head and Forehead, and in the Abscesses of the Chin and Neck.

Besides the last, there are other Bandages peculiar to the Forehead, particularly the *Uniting Bandage*, which is made thus: Take a Fillet two Ells long, and two Fingers broad, make a Slit in the middle of it, apply it to the Nape of the Neck, pulling the Heads or Ends on each side, and passing them thro' the Slit, which ought to be plac'd in the middle of the Wound, and so make 2 or 3 circular Rounds about the Forehead. This *Uniting Bandage* of the Forehead is proper for longitudinal Wounds.

There are three Bandages more, peculiar to bleeding in the Forehead, namely, the *Discrimen*, the *Royal*, and the *Scafa*: But I shall here content my self with shewing the Application of the *Discrimen*, because 'tis better and more in use than the other two.

Before I shew the manner of applying this Bandage, 'twill be proper to reflect upon the way of Bleeding in the Forehead, and all the

Parts of the Head ; for upon such Occasions you must make a Ligature upon the Neck, drawing the two Heads of it forwards under the Chin, and giving them to the Patient or some Assistant to hold ; and the Ligature must be girded as much as the Patient can bear. This done, the Patient must shake his Head downwards three or four times, in order to raise the Spirits and make the Vessel appear. When you have taken as much Blood as is necessary, cover the Orifice with your Thumb, and apply the Compress with your left Hand; then take a Filler of two Fingers breadth, and three Ells long, roll'd up to a Head; measure from the End of the Filler the Length that reaches from the Fore-head to the Nape of the Neck; then take the Part thus measur'd in your Right Hand, and apply it to the Compress, so that 'twill hang down over the Eyes. Thus hold the Filler fix'd upon the Compress with the Thumb of the Left Hand, and the Ball or Head in the Right Hand, which run obliquely upwards under the Left *Os Parietale*, after which bring it down to the Nape of the Neck, and so under the Right Ear, so as to cover the Compress; then raise the first end of the Filler that was left dangling down, and draw it obliquely to the right *Parietale*, that it may make a Round equal to the other. With the right hand draw out the Ball to 3 or 4 Rounds about the Fore-head, upon the Orifice. This Bandage

is call'd *Discrimen*, i. e. Distinction or Separation. 'Tis proper for Bleeding in the Fore-head, and in the Temple Artery.

The proper Bandages of the Eye are of two sorts, one for one Eye only, and the other for both. A Fillet for one Eye ought to be two Ells and a half long, and three small Fingers broad. Before you apply it, you must cover the Eye with a round Compress of Linnen steep'd in an appropriate Liquor. If you mean to dress the left Eye, hold the Roller in your right Hand, apply the end of it to the Nape of the Neck, which you hold with your left hand, run it behind the Ear, upon the Cheek, and so cover the Eye, after which raise it obliquely above the Forehead to the upper part of the right *Os Parietale*, then bring it down the Nape of the Neck, and so run it along the first Cast of the Fillet, which by this means becomes double. When you come to the Nape again, raise it, and make two circular Convolutions round the Forehead, and at last fasten it with a Pin where you will.

A Fillet for both Eyes ought to be three Ells long, and of the same breadth with the last. This may be apply'd in a Roller, either with one or two Heads; but a Roller with one Head is most commodious, and more easily apply'd. You begin as in the former, by applying the end to the Nape of the Neck with the left Hand, holding the Roller roll'd up to one Head in the right Hand, above either the

right

right or the left Eye ; then bring it about to cover the Eye, running obliquely upon the upper part of the left or right *Os Parietale*, and so return to the Nape ; after which run it forwards again along the other *Os Parietale*, above the Eye, and upon the Cheek, and so return again along the first Round to the Nape. Then raise it above the Ear, and make circular Convolutions round the Forehead, and at last make it fast by the Ear. In this Application you must take care not to gird the Eyes hard, for they are very sensible Parts, and the flux of Humors and Pain would thereby be encreas'd.

Here I can't pass by a great Disorder in the Eyes that I met with in my Practise, as being a fit Subject for *young Surgeons* to reflect upon.
‘ I was call'd to a young Lady in the Country,
‘ about six Leagues from *Paris*, that had a great
‘ *Erysipelas* or *St. Anthony's Fire* in her Face, her
‘ Eyes very much inflam'd, and a violent In-
‘flammation in her Eye-lids, with a livid Co-
‘lour, and disposition to a Gangrene. . Being
‘ all alone, without any Physician to consult, I
‘ scarify'd the two Eye-lids all over, and made
‘ a Digestive of the Yolk of an Egg, Myrrh,
‘ and Aloe dissolv'd in *Spir. Vin.* with which I
‘ anointed the Pledgits, applying above each
‘ Pledgit a round Compreſs to each Eye steep'd
‘ in a *Decoction* of *Roses*, *Wormwood*, *Fenugreek*,
‘ *Fleabane*, *Linsced*, and *Marshmallows*, in *White-*
‘ *wine*. Before I apply'd the Compress, I moi-
‘ sten'd the Eye-lids twice a day with the same

‘ *Li-*

' Liquor very hot, making use of false Tents,
' for the Junction of the Eye-lids was very te-
' nacious and apt to adhere. The Eyes were
' quite shut for ten Weeks, *viz.* from the mid-
' dle of *May* to the end of *July*. I waited upon
' her all *June*, and confin'd her to an exact
' and suitable Diet, for there were ugly Symp-
' toms about her, particularly a *Fever*, and a
' *Delirium*. She was blooded 15 or 16 times,
' took several Clysters a-day, and had Caute-
' ries apply'd to her Neck and behind her Ears.
' At the end of *June* I brought her to *Paris*,
' and was assisted by Dr. *Deuxvioye* all the
' Month of *July*, during which we continued
' to dress her with the above-mention'd emol-
' lient Liquors, and at the end of that Month
' she open'd her Eyes, and saw perfectly well,
' having suffer'd no Alteration in the Body of
' her Eyes; and her Eye-lids were so well
' cicatriz'd, that no Scar was to be seen.

This Observation may afford Instruction to *Young Students of Surgery*, who in the like Case happening to be destitute of the Assistance of a Physician, in the Country or elsewhere, may use the same Method, with a particular Care not to leave the Patient if they can stay by him, and to enjoyn a suitable Regimen in the way of Diet. Upon this Occasion I may say after *Galen*, *Averroes*, *Albucasis*, *Guido*, and *Falco*, That tho' Surgery be a Manual Operation, a Surgeon ought to be acquainted with some Principles of Physick, in order to be a

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Judge of Natural Things, and to prescribe such Diet and Medicines as are proper for every Distemper.

The Nose has both *proper* and *common-Bandages*; the *common* are thrce, viz. the *Sling*, the *Rag*, and the *Uniting Bandage*. The *proper* are of two sorts, viz. the *Nose*, and *Fossa of Amyntus*.

The *Sling* ought to be an Ell long, and two good Inches broad. You must fold it into a double, and cut it along the middle lengthway into two Heads, leaving only the breadth of two Fingers uncut. This Bandage is proper for the transverse Wounds of the Nose and the Cartilage, and is apply'd like that of the Fore-head, by taking it into your two Hands at the place where the Cutting ends, placing it upon the middle of the Nose, and drawing the upper Heads downwards to cross at the Nape of the Neck, and so be made fast at the top of the Head; the lower Heads being brought along the Cheeks, to cross likewise behind the Head, and be made fast upon the Forehead.

The *Rag* is a common Bandage of the Nose, which may serve for all its Disorders, excepting Longitudinal Wounds. To make this, you measure from under the Nose to the Nape of the Neck, which makes about half an Ell; and that part of it which runs from the Nose to the Nape ought to have the breadth of two large Inches; but what covers the Nose itself should be somewhat broader, which occasions its being call'd a *Rag*. The remaining part of the

the Fillet or Swath must be slit as far as under the Nose, and the Heads that cover the Nostrils must be slit, to give way to Respiration. Under the Nostrils, and above the Band, apply a small Ribbon of half a Finger's breadth, and an Ell in length, and make it fast at the Nape: The two Heads that hang down must cross one-another under the Nostrils, so that *that* on the left side moves to the right, and that on the right turns up on the left, near the lesser *Canthus*' or Corners of the Eyes, there to form the *Sparhawk*; and if there be a Fracture in the Nose, you may make of the same Heads the *Fossa of Amyntas*, by conducting them accordingly. The Head on the right side runs from before backwards above the Ear, and behind the Head; then it rises obliquely above the left *Parietale*, and making a cross upon the Nose, glides along the Cheek, and under the right Ear. The Head on the left side takes the same course with the other along the right *Parietale*, above the middle of the left Cheek, and under the Ear, so that the two Heads cross one-another at the Nape, and then rising on their respective Sides, come under the Ears; after which, they make circular Convolutions upon the Nose, running from before backwards, and so cross at the Nape, and at last rising above the Ears, circulate round the Fore-head.

The Bandage call'd the *Nose*, is proper for the *Venæsection* perform'd on the Tip of the

Nose, by making a Ligature in the Neck : It ought to be two Ells and a quarter long, and two Fingers broad. In order to apply, roll it up to a Head, hold the Roller in your right Hand, apply your Compress to the tip of the Nose with your left Hand, and keep it on with your Thumb; then measure upon the end of the Roller the distance from the tip of the Nose to the Nape of the Neck, and hold the Roller at the end of the Part thus measur'd; this done, apply that very place of the Roller where you hold it upon the Compress, and keeping it firm upon the Compress with the Thumb of the left Hand, hold the Ball or Roll still in your right, and run it above the Suture call'd *Sagittalis*, from before backwards, and so pass it above the Nape of the Neck, then under the Ear, afterwards upon the Cheek, and so on above the Nose. Then take the end of the Fillet that hangs dangling down upon the Breast, raise it above the Nose, along the *Sutura Sagittalis*, to the Nape, and so to the main Body of the Roll, with which you are to make three or four circular Turns, or more if there be occasion, round the Nose.

Having promis'd in my Preface to shew the Way of reducing Fractures and Dislocations, and of distinguishing their Signs, I find my self oblig'd to commence that Task with the Fracture and Luxation of the Nose.

CHAP. IV.

Of the Fracture and Luxation of the Nose.

THE Bones of the Nose may be dislocated, but the Accident is very unfrequent. I once saw a young Surgeon that had suffer'd a Luxation of one of the Bones of his Nose by a Fall ; and being employ'd to set it right, I presently discover'd that the young Man's Nose was very crooked, and set it accordingly. I took a small Stick fitted to his Nostril, and having cover'd it with Linnen, conducted it into that Nostril with my right Hand, and push'd the Bone strongly upwards, resting the Thumb of my left Hand upon the Root of the Nose ; by this means I put the Bone into its proper place, and in rejoyning the other Bone it made a noise. There was no occasion to lay any thing above it, because here there are no Ligaments, and the Bones being only cover'd with their *Periostiums*, can't slip out.

The two Bones of the Nose may be fractured, and so may any one of 'em by it self, and the Reduction is not very easie, by reason of their situation, smallness, and figure, for they are very thin in Substance, convex on the outside, and concave within, in order to form the Nostrils. By this means it comes to pass that upon a Fracture the Splinters sink inwards ; and the Difficulty lies in raising these small

Fragments, and keeping 'em in a due posture of Union. However, with a little Dexterity the Reduction may sometimes be accomplisht, by introducing into the Nostril a small piece of Fir, or any other soft Wood, garnish'd with Lint or Cotton. If it be the left Nostril, we must convey it in with the right Hand, and the Surgeon ought to rest the Fore-finger of the left Hand upon the Bone of the Nose, or upon both. If both are fractur'd, the Surgeon conveys his garnish'd piece of Wood into one Nostril, and a Servant thrusts another piece of Wood into the other Nostril; and the Surgeon makes the Conformation or Regular Position with the end of his Fore-finger, or of his Thumb. This Process being over, the Surgeon is to put in a Leaden Pipe (or two, if the Fracture affects both the Bones) well arm'd with Lint or Tow, that it may be soft and inoffensive.

The Pipe serves for two Uses, viz. to keep up the due Position of the Bones thus set, and to procure Respiration. We tie 'em to the Patient's Cap with small Ribbons on each side. 'Tis needless to speak of the Signs of this Fracture, since the Deformity or unwarmed figure of the Nose is sufficient to discover it; for nothing disfigures a Man more than the Nose's being sunk, or plac'd in a crooked Position; and if the Fracture be not remedied, 'tis follow'd by two very troublesome Inconveniences. If the Bone continues sunk and flat, the Patient will have a stinking Nose; if it stands awry, nothing

thing is more unsightly and disagreeable to the Eye. Upon this Consideration I would have all *Young Surgeons* be particularly careful in the Cases of this *Fracture*, and omit nothing that's proper to be done upon the Occasion.

The Bandage for the Fracture of the *Nose* is the *Fossa of Amyntas*, which is made of a Filler three Ells long, and of the breadth of one's little Finger. The Dressings consist of small Compresses and Pastboard to contain the Bones. There ought to be two small Compresses of Linnen, doubl'd four times, two inches long, and half a large Finger broad, which are to be laid along each side of the *Nose*, to fill up the Cavity of the great *Canthus*; and above these we should lay smaller Compresses. We are likewise to lay on another Compress of Linen in a triangular form, of the same breadth with the *Nose*, and guard it with a small piece of Pastboard of the same figure, the *Pastboard* and *Compreß* being sew'd together. This little *Compreß* and *Pastboard* ought to be laid upon the *Longitudinal Compresses*, and its Points should reach to the tip of the *Nose*. This done, we take two other *Compresses*, the breadth of one Finger, and eight Fingers breadth long, and apply it cross-ways, so that the middle of it falls upon the *Root* of the *Nose*. In the mean time 'tis still to be remember'd, that the little Pipes mention'd above are to continue in the *Nostrils* (or only *one Pipe in one Nostril*, if only *one Bone* be broken) till the Re-union is ac-

complish'd. The Fracture is to be ty'd up with a Fillet or Swath the length and breadth prescrib'd before, roll'd up to a Head. If you begin from the left Side, you must hold the Roll with your right Hand, and the end of the Roller with your left, which you are to place on the Nape of the Neck, and there keep it firm. With your right Hand you draw the Roller obliquely over the lowest part of the Cheek that you can reach, passing it above the *Os Parietale*, and by the Nose; then rising upwards to the upper part of the right *Parietale*, you run it behind the Head, and so return forwards above the left *Parietale*, over against the other Head; then having cross'd the two Heads upon the Nose, you descend by the lowest part of the right Cheek, so that the two Rounds of the Roller upon the Cheeks may be equally low. After that, you continue to roll from the right Cheek to the back parts of the Head, as low as you can go, and then make a Round upon the Nose from before backward. This done, you turn along the middle of the *Os Occipit's*, and at last make a Circle round the Forehead, in order to make fast the Bandage.

CHAP. V.

Of the Bandage of the Ears; and of the Cap of the Head.

THE proper Bandages of the Ears, are Slings with six Heads. The Linnen of which the Sling is made must be three quarters of an Ell long, and four Fingers broad. You first fold it into threc Doubles, then fold it again in the middle, after which the end of the Plait must be folded in about the breadth of two inches; then you cut the Linnen at the two ends, on each side, to the Mark of the Plait or Fold, which gives you six Heads. You must take care to cut but very little of these ends of the Fillet. Having dress'd *one* or *both* Ears with proper Remedies, you're to lay two Compresses of the same figure with the Ear, one above, and another under the Ear; then you place the uncut part of the Sling upon the Ear, not across, but lengthways, so that three Heads may rise upwards, and the other three fall downward, and passing under the Chin, rise again to the top of the Head, where all the six joyn one-another. This Bandage is a Contentive Bandage for the Wounds and all other Disorders of the Ear.

Tho' the Cap is rarely used for the Head, yet considering that 'tis made use of in Amputation of Arms and Legs, I would have young

Students to know it, that they may be capable to use it upon Occasion. The Fillet of which 'tis made should be about six Ells long, and two large Inches broad. It must be roll'd up in two Balls or Heads, one to be held in each Hand; then placing the middle of the Fillet upon the Forehead, you advance the Ball of the right Hand to the left Ear, and there stop; after that you advance with the Ball in the left Hand that rested upon the Forehead, beyond the right Ear, where you stop till the Ball in the right Hand comes to the Nape of the Neck; then the Ball in the left Hand advances likewise to the Nape, where your Hands are to exchange Balls; after which, while the left Hand holding the Ball that was in the right, rests upon the Nape, the right Hand with the Ball must pass above the left Hand, and advance to the right Temple, where it stops and stays for the other: This done, the left Hand that was posted at the Nape, raises its Ball by a *Reflection*, and passes over the *Sagittalis Sutura*, upon which the Thumb being planted directly upon the middle of the Ball, 'tis drawn directly to the Root of the Nose, where it rests under the Fore-finger of the left Hand, while the Ball in the right Hand passes above the first Head, upon the Forehead; and there the two Hands exchange Balls again, and the right Hand keeping fast the Ball upon the lower part of the Forehead, the left advances as at first, beyond the right Ear.

Ear, and there stops; upon which the right that rested upon the Forehead, raises its Ball with a renvers'd Turn in forming a second *Dolioire*: And thus by continuing to round in the same manner from behind forwards, and from before backwards, so that the Fold of the renvers'd Turns are all one above another, both on the Forehead and the Nape, the *Cipeline* or *Cap* is finisht by *Dolioires*, and the Head is cover'd all over.

I know very well that there's another way of making it, by running the Fillet along the lateral Parts of the Head, and making the renvers'd Turns both at the Forehead and the Nape, the use of which is to keep the Sutures tight; but considering that 'tis very uncommon, I wave the Description of it. 'Tis sufficient for any young Beginner to know the Method I have now laid down, which will prove very easie upon the least Reflection. In the mean time, 'twill be proper to take notice, that all Caps are made by three Bandages, namely, the *Circular*, the *Renvers'd*, and the *Dolioire*.

Having thus demonstrated the common Bandages of the Head, and part of those of the Face, and the way of applying them, it remains to touch upon those of the lower Jaw; to which I must first premise the Fractures and Luxations of that part, with their Signs and Ways of Reduction, but not in a distinct Chapter, for my Method leads me to include

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all relating to one Part in one Chapter, as I have already done in treating of the Fractures and Luxations of the Nose.

C H A P. VI.

Of the Signs by which we discover a Fracture and Dislocation of the lower Mandible, and of the Means to reduce it, with the proper Bandages, and the whole Process of the Dressing.

The lower Mandible may be fractur'd all over the Extent of its Body, which includes all the Teeth. When 'tis broken in the middle, the Signs are apparent, and obvious enough both to View and Touch. If 'tis broken obliquely into Splinters, you must put your Fingers into the Patient's Mouth, and press up the Eminencies both on the inside and the outside, in order to unite the Ends one with another; if the Fracture runs quite thro' a-cross, so that the Ends lie one against another, you must make an Extension, and Counter-Extension, by pulling with your two Hands, the one forward, and the other backward, in order to join the Bones one with another; and if the Teeth are divided, shatter'd and struck out of their Sockets, they must be reduc'd to their proper Places, and join'd and fasten'd to those which are fast, with a Silver

or Gold Wire, or small Brass-Wire, or else upon a fresh Occasion, with a wax'd Thread. The Teeth ought always to continue thus chain'd till the *Callus* is made.

As the lower *Mandible* may be broken several Ways, viz. either into Splinters, or across, or lengthways, so it creates a great deal of Trouble to a Surgeon, by reason both of its Figure and its Action, and especially when 'tis broken into several Splinters.

I can't well shew the manner of reducing all the Fragments of the Jaw; a thorough-pac'd Knowledge of that matter depends upon the Industry of a skilful Practitioner. But that our Surgeons may not be quite destitute of Instruction, I must acquaint 'em, that in such Cases they must have Recourse to Advice from others; and above all, when they examine the Bigness and Extent of the Fracture, they ought to consider the Figure of the whole lower *Mandible* that forms the Chin. The true way will be to invent upon the Spot a Machine, whether of white Iron, or of Leather or Past-board, which is very much in Use. For if there are several Splinters in the *Mandible*, then you must compress it the harder, and make use of a Chin-piece made of Tin, arm'd with Cotton, and good Linnen Compresses. The *Sling* with four Heads, describ'd above for the Chin or the Forehead, may be us'd upon this Occasion. But when the lower *Mandible* is broken in length or
cross

cross-ways, you're to make use of Compresses of Linnen and Past-board, of the same Figure with the lower *Mandible*, or as near as they can be. Here I address my self only to young Surgeons; if they're acquainted with the Figure of the Bone, I'd give 'em the Advice of *Pareus*, one of the greatest Practitioners of his Time, *viz.* That *that* which in his Youth instructed him perfectly to reduce Fractures and Luxations, was the gathering of Bones in the *Church-yard*, with intent to view 'em narrowly.

After a due Survey of the Figure of the lower *Mandible*, and the means to reduce it, we must endeavour to keep up the Union by Bandage and Compresses. The Bandage is call'd the compound *Horse-Bandage*, with allusion both to its Figure and its Use, for by its Figure it represents the way of bridling a *Horse*, and its Use consists in preserving and guarding the Union of the Bones. The Bandage ought to be made of a piece of Linnen folded in four Doubles, as I said before. It ought to be sixteen Fingers breadth long, and have a Hole or Slit in the middle to receive the Chin. Then you must have another Compress of Linnen sew'd to a Past-board, of the same Figure with the Compresses, and open in the middle. Let the first Compress be steep'd in some Anodine or Defensive, such as the Yolks of Eggs beaten up in Vinegar and Water, and apply the Slit of it to the middle of the Chin, pinning it to the Patient's Cap,

on each side the Temples. The second Compress, with its Past-beard, should be apply'd in the same manner. As for the Fillet for the Bandage, it must be six Ells long, and two Inches broad, and being roll'd up in two Balls or Heads, should be apply'd under the Chin, and from thence mount upwards along the Cheeks, near the lesser *Canthus* of the Eyes, till it comes at the Crown of the Head, where it crosses, and the two Hands shift Balls; this done, you must descend to the Nape of the Neck, and after crossing and shifting Balls again, return from behind forwards under the Chin; there you must cross again, and then re-ascend to the Nape, and after crossing again, return under the Chin, from whence rising upwards upon the Cheeks, you make a third *Doloir* on each side. This done, you cross yet again upon the Crown of the Head, and re-descending to the Nape, cross yet once more, and so return under the Chin, where you are now to observe, that you must not cross, but pass the Ball in the right Hand above the Chin, and under the Ball of the left, running it to the right Ear, where you stop a little. Then the right Hand takes the Ball of the left, and passing above that of the right, circulates it upon the Chin; after which you re-descend to the Nape, to cross after the usual manner, and make a circular Turn round the Forehead; and if the Fillet be too long, you must run it once more about the
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Chin. This is what we call the *Chin-cloth*.

This I take to be a satisfactory Account of the Fracture of the lower *Mandible*; it remains now to treat of the Signs of its Luxation, and the Means to redrefs it.

We know that the lower *Mandible* is dislocated, first, when the Chin turns to one side, and the *Condylus* makes an Eminence on the other; and secondly, when the Mouth stands awry.

The *Mandible* may be dislocated either forwards or backwards, but more readily forwards, because the upper part of the *Glenoides Cavity* of the Temple-Bone is smooth, even, and slick, which makes the *Condylus* throw to the Fore-side rather than backward, and in that Case the Chin leans a great deal more to the dislocated side, than when the *Condylus* flies backwards, and rests upon the *Mastoides Apophysis*.

There are two Signs by which we distinguish the one Luxation from the other: The first Sign that speaks a Dislocation backwards is, that the Chin does not lean so much towards the side of the Dislocation; and the other Sign of the same Importance is, that the *Condylus* makes no Eminence on the sound side. For an Experimental Proof of this, take a lower *Mandible*, separated from the Head, and place the right *Condylus* in its Cavity, supposing the left to be violently out, and resting upon the *Mastoides Apophysis*, you'll then see that the Chin does not lean so far to the right Side.

Side, and the *Condylus* of the same Side does not jut out.

Such are the justest Signs we can give of the Dislocation of one side of the *Mandible*, either forwards or backwards.

To set the lower *Mandible* dislocated, the Patient should be plac'd lower than the Surgeon, with a Servant behind him to hold his Head, with his two Hands upon his Forehead, the Head being strongly supported by the Servant's Breast. The Surgeon ought to chuse the most convenient Posture, which I take to be that of sitting upon his Knees before the Patient. If 'tis the right Side of the *Mandible* that's dislocated, he must put into his Mouth his Thumb, guarded with a small Fillet, both to rest the surer upon the Grinders, and to prevent his Thumb's slipping or sliding off. If one Thumb is not strong enough, he must put in both his Thumbs, and forcibly pull the *Condylus* of the *Mandible* downwards, and so push it into the Cavity. This is what we properly call Impulsion.

The Luxation being thus reduc'd, he must lay the Bandage call'd the *Simple Horse-Bandage* upon the dislocated Side. The Fillet should be three Ells long, and two Inches broad, and roll'd up to a Head. After the Compress is apply'd under the Chin, and conducted along the Cheeks, it must be made fast on the fore-part of the Ears. If the Dislocation is on the right Side, the Surgeon takes

takes the Ball or Head in his right Hand, and the end of the Fillet in his left, and so places his two Hands behind the Head. Then he passes the Ball in his right Hand under the Chin, and under the end of the Fillet that he holds in his left ; after which the right takes hold of the end formerly held by the left, and stops, and then mounts upwards by the back parts of the Cheek, over the dislocated *Condylus.* This done, he makes the first Round of the *Horse-Bandage* from below upwards, and then descends to the Nape ; after that, passing the Fillet under the Chin, on the right Side, he rises equally upon the first Cast of the Fillet, and coming to the upper part of the Head, begins to make the first *Doloire* from behind forwards ; then he runs it again under the Chin, and re-ascends by the left Side upon the same Cast. Here Care must be taken that the Rounds lie equally one above another on the side that is not dislocated ; but this Caution extends only to the simple *Horse-Bandage.* This done, he returns to make the third *Doloire* after the same manner with the former two, running from behind the Nape, makes circular Turns over the middle of the Bone of the *Occiput*, above the right Ear, and ends with two Rounds above the Forehead.

We know that the *Mandible* is dislocated on both sides when it hangs down upon the *Breast*, and the whole Chin advances forwards ;

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when above the *Mandible* we see the temporal Muscles bent, when the *Saliva* drills from the Mouth of the Patient, he being uncapable to retain it, and the Patient can neither shut his Mouth, nor move his Tongue in order to speak. The Reduction of a Luxation on both sides, is more difficult than that of one side, and the Symptoms are more grievous. It behoves us to reduce it with all Expedition, in order to prevent the Pain, Inflammation, Convulsion, and oftentimes Death, which ensues on the seventh or eighth Day, sooner or later, according to the Constitution of the Body. All good Practitioners agree, that after 'tis well reduc'd, it becomes firm in twelve Days, and then cannot fall off.

To reduce the Luxation of a *Mandible* on both Sides, you must lay the Patient upon the Ground, or place him upon a little low Chair, and hold his Head fast. Then the Surgeon placing himself before him in the most convenient Posture, must run into the Patient's Mouth his two Thumbs, each of 'em guarded with a small Fillet, to prevent the Teeth, as well as to hinder them to slide of. If the Reduction can't be accomplish'd by this Means, by reason that the Mouth is so close shut that he can't put in his two Thumbs, he must have recourse to little Wedges of Fir, of a square Figure, and as big as one's Finger, which being put upon the Grinders to push the *Conysus's* downwards, will serve to set the *Mandible*

dible in its Place, when 't push'd from below upwards by the Servant that sits behind the Patient ; for which end he puts a Fillet under the Patient's Chin, and pulls it upwards with great Force, resting his Knees upon the Shoulders, the Surgeon at the same time pushing the *Condylus's* downwards, to re-place 'em in their Cavities. The Reduction being made, the Surgeon makes his Bandage, applying a Compress under the Chin as long as the breadth of sixteen Fingers, which is not at all open, but soak'd in Oyl of Roses beaten up with the White of an Egg. The Bandage is the compound *Horse-Bandage*, which is a Fillet done up in two Rolls (as I intimated above in speaking of the Fracture of the lower *Mandible*.) This Compress being plac'd under the Chin, must be made fast on each side of the Temples, being cut sloping in the two ends like a Half-Moon, to answer the Figure of the lower *Mandible*. The Fillet is applied by putting the two Rolls under the Chin, and so mounting upwards under the Ears, crossing upon the top of the Head, by shifting the Roller naturally from one Hand to the other, after which they descend to the Nape of the Neck, then cross and run under the Chin ; then they cross again, and so rise up on each side along the first Rounds. This done, they make two *Doloires* from behind forwards, on each side, then they cross on the top as before, after which they re-descend to
the

the Nape, cross there, and re-passing under the Chin, cross again, and rise up along the Cheeks in a third *Doloire*; after which they cross yet again, both above and at the Nape, and re-ascending above the Ears, end in circular Turns round the Forehead.

Having thus endeavour'd to explain, as much as possible, the Application of the Bandages of the Head, it remains now to shew the Application of the Bandage call'd *Divisive*, which is very necessary in Practice. It consists of a Fillet done up in two Rolls, about five Ells long, and two large Inches broad, which being apply'd to the middle of the Forehead, runs from before backwards, and then crosses at the Nape of the Neck; then passing from behind forwards, under the Arm-pits, returns from before backwards, and crosses at the Nape; after that mounting up behind the Ears, it crosses upon the Forehead, re-descends to the Nape, and crosses once more; at last, re-passing under the Arm-pits, the two Rolls or Heads make a circular Turn round the Body.

The Bandage call'd *Divisive* serves for the Burnings of the Chin, Neck, and *Sternum*: Whether it be in Children that fall in the Fire, or in an Army, when on the bursting of Cannon, the firing of Magazines, or other Accidents, the Men are burnt either all over the Body, or only in some Parts, as the Head, Chin, Breast, &c. Thus I saw, at the Siege of Bâtie,

in *Flanders*, at which the two Batteries of Cannon unfortunately burst, three Gunners were burnt almost all over the Body : One of these three was burnt almost all over the Breast, the Neck, and the Chin, and so there was Occasion to make a Divisive Bandage for him.

For the advantage of young Students in Surgery, I shall here relate what we cur'd these great Burnings with, for I was then in the Hospital of the Army. The Remedy we made use of with Success, was no more than a *Nutritium*, made after the following manner :

Take of *Ceruse* 8 Ounces, common *Oyl* of *Walnuts* 12 Ounces, *Plantane* and *Rosewater*, or, which is better, *Juice of Housleek* 4 Ounces, with about an Ounce of *Vinegar*; mix all in a Marble or Leaden Mortar, putting in first a little of the *Oyl*, with a little of the *Ceruse*, a little *Water* or *Juice*, and a little *Vinegar*, and so alternately till all's in; stir it with a wooden Pestle for six hours, and so nourish it to the consistence of a *Nutritium*.

As for the Neck, the Bandage that properly belongs to it is a *Contentive Bandage*, made of a Fillet an Ell long, and two Fingers broad, the middle of which is applied to the Head, with the two Ends dangling down upon the Shoulders on both sides : After which they take another Fillet about two Ells long and three Fingers broad, done up a Roll, and with that make several circular turns, and so make it fast round the Body. This last Fillet must

not gird at all. As for the two Heads or Ends that hang down, they are then rais'd up, and made fast upon the Crown of the Head.

The Breast has its Bandages both *Common* and *Proper*. The *most common* is the *Napkin* with the *Scapulary*, which is call'd the *Scarf of the Breast*, and may be us'd in several Cases, such as the Operation of an *Empyema*, or a *Paracentesis*, in all the *Wounds* and *Fistula's* of the Breast, in fractur'd and dislocated Ribs, and in a Fracture or Luxation of the *Sternum*. Each of these Bandages shall be spoke of in their proper places, when I come to treat of the Diseases of every Part, as they are naturally situated.

CHAP. VII.

Of the Fracture of the Clavicula, or Channel-bone.

THE Channel-bone may be broke forwards, backwards, or in the middle. 'Tis observable, that whatever way it breaks, the end which articulates with the Shoulder-blade is still lower than that end that joyns the *Sternum*, by reason that the Arm makes it lean downwards.

If the Fracture is transversal, 'tis easier to reduce than a round Fracture, upon account that in a transversal Fracture the broken Bone returns to its place, by being rais'd to one side

or t'other with the Palms of one's Hand upon the Fingers; but in a round Fracture you must lay the two Ends one upon the other, because they are not so ready to glue together. If the Fracture is round, you must set and lay the Arm backwards, while a Servant holds the Shoulder forward from his opposite. If the Fracture is transversal, whether forwards or backwards, in order to reduce it, lay the Patient upon a Chair without a Back, after which set your Foot against the Stool upon which the Patient sits, and with your hands take hold of the two ends of his Shins, and then pull strongly from before backwards, and with your Knee from behind if necessary. And if it so happens that you can't reduce it thus, by reason of one of the Splinters being bent downwards, lay the Patient on his Back, and put something that's hard, as a Kettle, or a Stone, or any thing that's proper, covered with a coarse Covering; and placing your hands in a convenient posture, press the two Palm-Hands with all your force upon the two Extremities of the Shoulder-blades, from above downwards: And if, after all, there be any Splinters of the broken Bone that cannot be reduc'd, you must make an Incision, and take 'em out with Pincers, cutting through the skin and that gall the Flesh.

If the Fracture is oblique, or transversal, and if there be many Splinters, you must lay the two Ends together as near as you can, and on

n heedfully guard the Cavities that lie above
d below the Channel-bones. If only one
annel-bone be broken, you must apply four
Compresses in four Doubles, soak'd in an a-
gent Defensive made of *Bole-Armoniac*,
bites of Eggs, *Dragons-blood*, and *Rosin*, all
iten together. Some apply the Defensive
t in Winter, and lukewarin in Summer, but
the better way is to have it hot in all Seasons.
The abovemention'd Compresses being care-
ly apply'd both above and below the *Clavi-
a*, you're to add two other Compresses, co-
'd with Pastboard, and sew'd, to make 'em
able ; these you're to apply over the others
the form of St. *Andrew's Cross*, and they
ght to be cut to the figure of the *Claviculara*.
The Bandage is made with a Fillet six Ells
long, and four Fingers broad, done up in two
olls or Heads held in the Surgeon's Hands :
The Fillet must be run under the Patient's
mpit, then mount cross upon the Process
l'd. *Acromion*, after which one of the Rolls
ould be carried forwards, and there held fast,
ile the other turning behind, passes under
e sound Armpit from behind forwards, and
is above the Roll held fast on the fore-part.
The making of this Bandage requires two Per-
sons, one to make the renvers'd, and the other
e circular Rounds : And he who makes the
ivers'd must be very careful in doing his
try. He takes the Roller in his right Hand,
'ding it fast between his four Fingers, with
his

his Thumb upon the middle of it ; then he rises with a renvers'd Turn upwards above the Channel-bone, as near the Neck as he can, lowering the Roll that makes the renvers'd just by the Armpit. Then he stops and holds fast, while the other which makes the circular Rounds about the Body passes above the Roll thus stopt, and then the Surgeon makes the renvers'd Turns with his left Hand. Then he runs the Roller above the first Cast of the Fillet, which he covers three times equally all over. After that, he continues the *Doloires* till the Channel-bone is quite cover'd. This is easily done without any Perplexity, for the two first Renvers'd Convolutions, both before and behind, serve for a Rule and Direction to all the rest. You must know, there's one Roll or Head that makes the Renvers'd, and another that makes the Circular Convolutions. With the last we make the *Geranium*, which is done by drawing the Head of the Fillet from before backwards : Then we bring two Turns to the upper part of the *Humerus*, covering all the Renvers'd Turns, and after passing under the opposite Armpit, make Rounds about the Body, as long as the Fillet serves. Of the other Head that makes the renvers'd Turns we make a Sling for the Arm, or else bring it to circular Rounds, after the same manner with the other, and provide a Gentleman's Scarf, which is better for holding the Arm.

C H A P. VIII.

Of the Luxation of the Channel-bone.

THO' the Channel-bones are articulated with the *Acromion Proces*s of the Shoulder-blade and the *Sternum*, by very close and tight Cartilages and Ligaments, yet *Galen* says, that he underwent a Dislocation of the *Clavicularia*, which created unsufferable Pain; that he bore such a tight Bandage as no Man else would have borne, and after having the Bandage upon him for a long while, was cur'd at last. Upon his Subject I shall only stay to make one Reflection that's of use in the way of Practice, namely, that when the Channel-bone is fractur'd in the upper part, near the Articulation of the Shoulder-blade, you must make the Bandage call'd *Spica*, which comprehends the *Geranium*; but if 'tis fractur'd in the middle, or near the Articulation of the *Sternum*, you must apply the *Capeline*.

C H A P. IX.

Of the Luxation of the Humerus.

THE Bone that's articulated with the *Omo-plata* or Shoulder-blade, is call'd *Humerus*, or *Os adjutorium*, because 'tis strongly bore up above, both by Muscles, and by the Apophyses of the Shoulder-blade and the Channel-

bone. *Hippocrates* calls it the Arm, or Bone of the Arm. In this Bone we must first of all remark its Head, which is round, very smooth, slick, and polish'd, and lodg'd in a superficial Cavity, that has neither Borders nor Ligaments, like the *Ischium* and the Knee: Besides, this Cavity is fill'd with a viscous slimy Matter, to facilitate the Motion of the Arm and Hand, which, as *Galen* has well observ'd, are the principal Instruments of Reason: And indeed, if we consider the use of this Member with reference to Mechanicks, we must own, that to it we owe all the fine Pieces of Workmanship that the World boasts of; and that Nature has display'd a wonderful Ingenuity, in allotting the Arm all the Advantages that render it so convenient, and even so necessary in the Course of Life. Upon this Consideration 'tis at once both just and necessary that we should preserve this Part in its natural Posture as much as we can.

Galen says, the *Humerus* may suffer Luxations four ways, viz. upwards, downwards, forwards, and backwards. *Hippocrates* says, he never saw the *Humerus* dislocated forwards; and adds, that he does not think such a Luxation is possible: But *Galen* makes an Apology for this Saying of *Hippocrates*, upon the Plea, that the Country where *Hippocrates* liv'd and practis'd was but thin of Inhabitants, and consequently did not afford so many Instances of Wounds and Accidents as Rome, which was the Re-

Residence of *Galen*: And to this purpose *Galen* affirms, that there were more People in one Street at *Rome*, in his time, than there were in *Hippocrates's* time in all the Country where he liv'd. *Galen* adds, That he had seen a Luxation of the *Humerus* forwards five times; once at *Smyrna* in *Asia*, and four times at *Rome*. One of the Causes that produc'd this sort of Luxations, he says, was the Wrestling Games, that were very frequent at *Rome* in his Time. The other Cause proceeded from no other Source but the Ignorance of the Bone-setters. He adds, That he saw two Men at *Rome*, who had the Heads of the two Bones under the Armpits, and assur'd him, that instead of one Dislocation, they had undergone two apiece. Now *Galen* perceiv'd well that this proceeded from the Ignorance of the Surgeons, as being unacquainted with the nature of the Articulation, and that they had with great Violence push'd the Bones from behind forwards. Upon this Head I can't but take Occasion to caution *Young Surgeons* to take care of falling into this Error in the like Case, and to inform 'em, that if they observe the Precepts of *Hippocrates*, they'll never be liable to such Mistakes. Since the *Humerus* can only be luxated three ways, viz. downwards under the Armpit, forwards, and backwards, the Luxation upwards being rather a Fracture of the *Omoplate* or Shoulder-blade, both in its *Acromion* and in its *Caracoidea* Proces, I shall confine my self to the Luxation.

known by *Hippocrates*, namely, that downwards under the Armpit, and lay open the Signs to know it by, and the Means to reduce it four Ways.

The Signs of a Luxation of the *Humerus* in its lower part, are, when you find a Cavity on the Shoulder, and the Extremity of the *Spina* of the Shoulder-blade, call'd *Acromion*, bends outwards, because the Head of the Bone of the Arm slipping under the Armpit, makes an Eminent; the Elbow throws it self outwards, and falls off upon the sides, but if you press it with force, you may make it answer the touch; the Patient finds more difficulty in bending his Arm forwards than backwards, the Arm is longer than it was, the Patient can't raise it on the opposite Shoulder, or touch his Mouth; in handling his Arm he feels a violent Pain, by reason that the Muscles are much bent and press'd, tho' (after all) Pain is not always the most certain Sign of the Luxation: As in the Case of the rending or breaking of some Fibres, the Arm can't raise or extend it self, and its Action may be disturb'd by a *Contusion* upon the *Deltoides Muscle*, an *Inflammation*, an *Imposthume*, and other Accidents.

In the Cure of *Luxations* there are three general Intentions; the first is to set the Bone in its right place; the second, to keep the Bone in this its due posture; and the third, to correct the Accidents that happen. The first Indication is answer'd three ways, namely, by

Extention, Retention, and Impulsion. As I pretend to shew the Reduction of the Shoulder three or four ways, which I have follow'd in my Practice, and are like to be made use of by other Practitioners, I shall begin with the *most common and convenient Reduction*, which takes place when the Bone is easily set, the Luxation not being of long standing, and the Patient not very fleshy. In this case, place the Patient upon a Chair without Arms, and lower than the Surgeon: If the Luxation is in the left Shoulder, order a Servant to grasp the Patient on the right Side, and clasp his Hands fast, the one upon t'other, under the Armpit of the dislocated Arm; then the Surgeon takes hold of the upper part of the dislocated Arm, under the Armpit, with his two Hands, one on the outside, and t'other on the inside, placing his Thumbs upon the upper end of the Arm, one against another. This done, a Servant takes the dislocated Arm between the Surgeon's Legs, holding by the lower part of the *Humerus*, and pulls it forcibly downwards as much as he can; upon which the Surgeon makes the Impulsion, keeping fast hold of the Arm, as above. In making this Impulsion or Shove, he must still keep in view that excellent Precept of *Hippocrates*, of knowing whence the Bone slipt out, what Road it took, and where it stops; for it must always go back the same way it slipt out. This being well consider'd, the Surgeon must make three different

Motions, and all almost at once ; the first in drawing the Arm from behind forwards by a Line ; the second in raising it upward ; and the third in pushing it directly into its Cavity. When the Bone re-enters its Cavity, it always makes a noise. The Bone is known to be set when the Patient can put his Hand to his Head and behind his Back.

The second way of setting the Shoulder, is to single out a Man that's bigger than the Patient, and place the Patient's Armpit upon the tip of his Shoulder. If the Luxation be in the left Arm, he takes hold of the lower and inner part of the *Humerus* with his right Hand, and with his left Hand grasps the Wrist of the dislocated Arm, the Hand of which must be placed in its natural figure, with the Thumb pointed upward, and the little Finger towards the Ground : In this fashion he pulls the Arm with his two Hands with all his force, resting them upon his Breast. Then the Surgeon embraces the Patient on the right Side, and with his right Hand pushes as forcibly as he can the Head of the Bone that's under the Armpit, from below upwards, and with the Palm of his left Hand behind presses the Extremity of the *Omoplate* downwards, in order to lower the Cavity, by which means the Head of the Bone enters with great facility.

The third way of reducing the Shoulder, is with a Napkin ; and this is a very ready and commodious way. You take a List of Cloth,

or

or a strong Ribbon about an Ell and an half long, and an Inch, or two Fingers breadth, cover : This you fold in at the middle, making a running Knot of one of the Heads, and another running Knot of the other Head. The Knots being join'd after the Arm is put thro' 'em, you apply 'em to the inner part of the dislocated Shoulder, upon a *good Compress* of Linnen four times doubled, and laid circularly round the Arm. The Knots must fall at the external lateral part of the *Humerus*, above the Compress ; then you draw 'em as hard as you can, running the two Heads from without inwards ; after that you pull the two Heads from within outwards, above the external part of the Elbow ; the Patient being set, as I have said, upon a Chair without Arms. This done, a Servant must come and embrace him upon the sound Side, and hold him fast with all his force. If the Patient's Seat is not large enough, another must be got, upon which the Surgeon is to mount, having hung about his Neck a Napkin folded in the middle, and ty'd at the two ends : Then a Servant comes behind the Surgeon, and draws the Arm with the Lift between the Surgeon's Legs, pulling it down with force downward, from without inwards, at the same time that the Surgeon grasps the head of the Arm, and raising the Arm, with the Napkin about his Neck, pulls it with his two Hands from the out to the inside, bearing his Hand towards the other Shoulder.

by which means he thrusts it into its Cavity.

The fourth way of reducing the Shoulder, is with the Heel, when the Patient can neither stand nor sit. The Patient is laid on his Back on a Quilt or Covering, and a Clew of Thread or a Ball of Leather fill'd with Saddle-stuffing or Cotton, proportionable to the Capacity of the Armpit, is put in it ; then the Surgeon sitting opposite to the Patient, before the dislocated Arm, reduces the Bone, if it be the right Shoulder, with the right Heel, and with the left Heel if it be the left Shoulder : He grasps the lower part of the Patient's Arm above the Elbow, and pulls it down towards the Feet, at the same time pushing the head of the Bone upwards with his Heel. While this is doing, another Servant keeps up the Arm with a Handkerchef, a fine Napkin, or a piece of Lift, and with the sole of his Foot presses the Shoulder downwards, to facilitate the re-entrance of the head of the Bone into its Cavity. This Method is indeed *very good*.

Here I only take notice of what is most regular in these four Methods of reducing a Luxation of the *Humerus* ; and I'm fully perswaded, that unless the Dislocation be of very long standing, and the Body very corpulent, *Young Surgeons* will succeed, if they observe the Methods now laid down. But if after all necessary Precautions they can't compass the end, then recourse must be had to Machines, such as the *Gate*, the *Ladder*, the *Glossocomus* of *Hippocrates*,

pocrates, and the *Lambi*. For my part, I can say and affirm, that without such Machines I have set dislocated Shoulders in Persons of all Ages, some above 80 Years old, both *Men* and *Women*; but at the same time it must be remember'd, these *Luxations* were of no long standing.

After the Reduction of the *Humerus*, you must make the Bandage call'd *Spica*, which is done two ways; first, with a *Swathband* roll'd up to one Head; and secondly, with a *Roller* done up to two Heads. Before you put on the Bandage, you must apply the *Dreslings*, consisting of a round Ball or Cushion of the bigness of an Egg, stuff'd with *Cotton* or *Worsted*, and laid under the Armpit; then a large piece of Linen cut into half-*Malta Crosses*, with a Compress of four Plaits, cut in the same shape, steep'd in Vinegar and Water, and cover'd with the Whites of Eggs beat up with Oyl of Roses. This Compreis must be apply'd very hot to the Shoulder above the Cushion; and then, in order to tie up the Shoulder with a *Roller* of one Head, you must begin to apply the end of the Roller under the sound Armpit, in the outer part of it, and ascend forwards crossing the Neck, after which you run it from behind forwards under the Armpit, making a Cross call'd *Chiaste*, or X, directly upon the tip (or *Acromion*) of the Shoulder. At every *Chi* or *Cross* you are to put a Pin. This done, you continue to run the Roller backwards upon the Back, and so turn forwards along by the first Cast.

Cast. Thus continuing to put a Pin at every *Chi*, you run the Roller along upon the former Turns, both before and behind ; at last you strike above the hinder Plait, and running forwards cross upon the Shoulder, make a fourth *Chi*. All these Crosses, which we call *Chi*, will form by degrees little *Dolosires*. This Bandage is call'd *Spica*, because it represents the figure of an Ear of Corn ; and under the Ear the *Geranium* is form'd, which makes a Triangle of the figure of a Crane flying. For the *Geranium* you must make two Turns, about two Fingers breadth above the *Spica*, round the Neck of the Arm ; so running from before to the hinder parts, cover the whole *Spica*, and at last repass under the Armpit. If you have a mind to make a Sling of the Band or Roller, bend in the Patient's Arm, and run it under his Wrist, so that the Thumb may be a little higher than the Elbow ; then run it over the Patient's Shoulder, near the Neck ; after that, make a circular Round or Turn about the Body, and so pass it above the upperpart of the Arm, continuing these turns till the Roller is spent. This is the *Spica* made with a Roller of one Head.

We come next to describe a *Spica*, done with a Roller with two Heads. This Roller must be of the same length and breadth with the former. You begin to apply under the affected Arm-pit, then you rise over the Shoulder, and so cross, making the Head in the right Hand to pass first, when you shift the Heads.

eads from the one Hand to the other. I intimated, that when we make use of a Roller ith two Heads, the right Hand must always ve its Head to the left, and the left to the ght. Each of the Heads must be turn'd both fore and behind; then you pass under the und Arm-pit, and Shift Hands in passing er the first Turns. This done, you come

cross upon the Shoulder, and so re-pass under the Arm-pit, and form the *Spica*, as I sh'd you with the other Roller. Having ade three *Spica*'s, you then make the *Gera-um*, with the Head that runs forwards, and e Head that runs behind must rise over the fected Shoulder along the Neck. Then han-
ng put the Arm into a Scarf or Sling, you -pass over the same Shoulder from behind
wards, and make a circular Convolution und the Body, in passing above the upper rt of the Arm. At last you make fast the oller where it ends.

The double *Spica* for both Shoulders dislo-
ted, is made as follows: After having ap-
y'd the Compresses and Cushions, as in the
ier Bandage, you take a Swath-band eight
ls long, and the breadth of five Fingers over,
ll'd up to two Heads. Beginning under one

the two Arm-pits, you cross upon the onlder, and shift Hands, running one Head fore, and the other behind. After that u cross under the other Arm-pit, and then e above the other Shoulder, and crossing,

form

form three small *Doloires* at the upper part of the Arm of each Shoulder, as you did in the *Spica* for one Shoulder; and under the *Spica* of each side, you must make the *Geranium* by two Turns of the Roller round the Neck of the Arm, run from each of the Heads that make the *Spica*: This done, you make a circular Convolution from each Head round the Body, and with two Napkins make Siings for the two Arms.

CHAP. X.

Of the Fracture of the Shoulder-blade.

Having thus shewn the distinguishing Signs of the Luxation of the *Humerus*, or the Bone of the Arm, its flying out of the Cavity of the Shoulder-blade, and the means for reducing it, together with the most necessary Remedies, we come to treat of the Fracture that may happen, either in the whole Body, or in the Parts of the Shoulder-blade. For sometimes the *Spina* or Ridge may be fractur'd; sometimes the Tip or Extremity call'd *Acromion*, and sometimes the Body of the Shoulder-blade, which is very slender, are so serv'd. In the Course of my Practice I have seen the Shoulder-blade broke into several Splinters; and if these are quite separated and prick the Flesh, you must make an Incision, and pull 'em out; but if they are not quite alunder, you must

1st keep 'em close with a Compress done
er with Glue or black Pitch apply'd upon
Fractures, and over that Compress you
1st lay a Pastboard, with a Compress four
its thick sew'd to it, in order to keep the
ne tight and safe. After this Application is
ely perform'd, you must make the Bandage
l'd *Etoile*; and let the Fracture be either
one or in both Shoulders, this must still
the Bandage. This Bandage is made as a
ller with one Head. If the right Shoul-
is fractur'd, you must apply the end of
Roller behind, under the left Arm-pit,
then rise obliquely over the right Shoul-
, moving from the out to the inside, then
pass from the inside backwards, and so
ke a Cross upon the first Turns. 'Tis this
oss that gives it the Name of *Etoile*, and
the Tracts are mark'd by vertue of this
oss, which is backwards; and follow the
ne Convolutions of the Roller, you're to
is still from the out to the inside, and from
in to the outside, crossing always behind,
which you're to make *Doloirs* two Fingers
bad, for you must cover the whole Shoul-
r-blade. At last you compleat the Bandage
a circular Convolution round the Body.

C H A P. XI.

*Of the Fracture of the Humerus, or the
Bone of the Arm.*

THE Signs of a Fracture in the Bone of the Arm, are evident, even to external View: For if 'tis a compleat Fracture, there will be a Faultine in the Figure, and the Arm will appear crooked. Besides, the Sense of Touching will likewise discover it, for in handling the Arm a Crack will be heard. In order to reduce, you must make an Extension, and a Counter-Extension; and if the Ends lie one upon another, you must make a stronger Extension with strong Lift. Here there's one Remark to be made that's very necessary in the way of Practice; namely, that in setting the Arm, the Patient must sit upon an unarm'd Chair, that a Servant may embrace and grasp him under the Arm-pit of the sound Arm; that another Servant must take hold of his Arm, and draw it upwards, without raising it; that at the same time a third Servant is to pull the Arm downwards towards the Ground; and in fine, that the Arm must never be extended, and that the Elbow must always be bent in when you thus draw the Arm. This prepar'd, the Surgeon must make the Conformation, by taking hold of the Arm with the Palms of his two Hands, and adjust the Bone by re-instanting it in its pro-

proper Place. The Apparel must all be ready, with the Whites of Eggs beaten up with Oyl of Roses, and a little Vinegar warm'd. At the same time you must have four Swathbands or Rollers, with four Longitudinal Compresses, one Transversal, and two pieces of Past-board. The first Roller must be an Ell and a half long, and two large Inches broad. The second ought to be an Ell and three quarters long, and of the same breadth with the first : But the length and breadth of the third can't be exactly determin'd, a Variety arising from the difference of Age, and the different bulk and length of the Parts ; however, generally Persons of equal Age require Rollers of equal length and breadth. 'Twas for this Reason that *Hippocrates* left all to the Prudence of the Surgeon ; and when he spoke of the length and breadth of the Rollers, he understood it of Persons of a mature compleat age, that were arriv'd at their full Dimensions. The same Rule did he observe with reference to every part of the Body ; and I, in imitation of his Example, give the same Caution to young Surgeons, relating to the length and breadth of Bands, computing their Measure to be always proportionable to the Dimension of each Part. For the Arm the Roller may be an Ell and a half long, and two Inches broad ; and when I say the Arm, I mean the Cubitus as well as the Humerus. The Roller for a fractur'd Shoulder

Shoulder-blade ought to be five Ells long, and the breadth of five Fingers broad; for the Leg, two Ells and a half in length, and three Fingers in breadth, that is, relating to the first Under-band, and the two Upper-bands; but the second *Hypolemus* or Under-band ought to be three Ells long. A Roller for the Thigh should be three Ells long, and four Fingers broad; only the second Band for the Thigh should be three Ells and a quarter long. All this I only design for a general Rule, extending to every Part that stands in need of Bandages.

Having already describ'd the length and breadth of the two first Bands, for a Fracture in the upper Bone of the Arm, I am now to tell you, that the two other Bands that are proper in this Case, must be of the same length and breadth. But before I come to shew the Application of 'em, I must give you to know, that as Bones may be fractur'd in several places, so they must be roll'd up different Ways: For if the great Bone of the Arm be fractur'd in the lower Part, and the Bone flies off to the inside, you must run the end of the Roller from the out to the inside, and make three circular Rounds upon the Fracture; after which you rise upwards by little *Doloires*, till you come under the Armpit. With the second Roller you make two Convolutions over the first Turns of the Band, then you descend under the Elbow, where you make a circular Round,

Round, leaving the Elbow uncover'd; after which you re-ascend, and terminate the second along with the first.

Tho' the great Bone of the Arm is rounder, and withal more even than any other Bone, yet there's no danger in applying some transverse Compresses to make it equal all over. After that, you apply four longitudinal Compresses, four times doubl'd, about eight Fingers breadth long, and two broad. These longitudinal Compresses must be laid along the Arm lengthways, leaving a small distance between every two of 'em. Towards the fold of the Elbow they may be a little shorter, to avoid Pain. The third Roller is apply'd to the Fracture with a single Turn, after which it rises upwards in great *Doloires*, and terminates with the two first.

Galen orders four, and would have the fourth to begin on the upper part, and then descend in great Circuits, being apply'd on the same side with the two Under-bands. This done, you apply Pastboards of a convenient length, about six Fingers broad, and of the same length with the Compresses. These must be made fast with small Ribbons, one in the middle, and one at each end. If the Arm is fractur'd in the middle, after making three Convolutions round the Fracture, you must mount upwards, pass under the Armpit, make a Round about the Body, and continue as above. If the Neck of the Arm,

near

near the Head, is broke, you must make the *Spica Bandage*: The Success I my self have experienc'd, in the Case of a Woman that was fourscore Years of Age, and not above two Months under Cure.

CHAP. XII.

Of the Fracture of the fore-part of the Arm.

AS the fore-part of the Arm is compos'd of the *Cubitus* and the *Radius*, so these two Bones may be either jointly fractur'd, or one of 'em only at a time. There is more Danger and more Difficulty in the Cure, when they are both broken, upon the account that they are not so easily kept tight as when only one is fractur'd; for the one, which remains unbroken, sustains the Arm, and hinders the Muscles to retire, which they do upon a joint Fracture. The Fracture of the *Radius* is more easie to cure than that of the *Cubitus*, because the latter serves for a Stay to the former. If both are fractur'd, you must make a greater Extension than you do when only one is broken, for then the sound Bone is a Stay and Prop to the other.

In order to compass a due Reduction, you must make an Extension and a Counter-Extension; after which, you make the Patient sit down upon a Chair, or lie in Bed, and order one to take hold of his Elbow with his two Hands,

ands, grasping it both on the outside and the inside, and another to grasp the fore-part of the Arm above the Wrist with his two hands. These two Servants are to pull or draw equally, putting the Hand in its natural posture, so that the Thumb is pointed upwards, and the little Finger to the Ground. After this, the Surgeon comes and makes the conformation with both his Hands. This one, and the Dressings being prepar'd, you must have in readiness four Rollers, tho' indeed three might serve. These must be of the same length and breadth with those for the upper Arm. If the Fracture is in the lower middle part of the fore-arm, and if one or both the Bones are sprung to the inside, it behoves you to apply the end of the Roller on the outside, and so make three Convolutions, upon other Fractures. Then you mount pwards in little *Doloires*, the Arm being bent or bow'd in, and finish or make it fast above the Elbow, which is left uncover'd. The second Roller is to be apply'd on the same side with the former, making two Turns round the Fracture, after which you descend lower, and then re-ascend in great *Doloires* to join the first Band. After that, you apply transverse compresses, or rather only one of them, that being sufficient. The way of cutting the Compresses is this: Take a piece of Linnen that's twelve Fingers breadth long, and eight broad, fold it lengthways in 3 or 4 gradual Plaits,

so that the Plaits do not touch one another. This Compress you are to apply to the lower part of the two Bones, placing the thickest part, where the Plaits fall, down towards the Wrist. You lay it over the Band to render the fore-part of the Arm equally big and round, to the end that the longitudinal Compresses may bear upon an equal Plan, having the same length and breadth with that of the Arm. The two small Pastboards must be apply'd on the outside and the inside, to support the two Bands, being distant or separated about the breadth of one Finger both above and below. These you tie on with three small Ribbons, and put the Arm into a Scarf or Sling. You must not forget to bend in and extend the Patient's Arm after ten or twelve days, that the *Callus* is a little firm; and that, for fear of making an *Anchylesis* in the Articulation of the Elbow, which would hinder it to stretch and bend.

CHAP. XIII.

Of the Dislocation of the Cubit.

HAVING thus dispatch'd the Diseases relating to the Continuity of the *Cubitus* and the *Radius*, namely, their Fractures, and the Means to reduce them; it remains now to set forth those relating to their Contigu-

y, viz. a Defluxion, an *Anchylosis*, and a Luxation. The last of these I mean to demonstrate exactly; and indeed, we may stay usefully, that the Luxation of the Cubit is very hard to be reduc'd, especially if it be compleat, and the internal Proces is got into the place of the external.

The *Cubitus* may be dislocated four Ways, viz. outwards, inwards, upwards and downwards; and of these Luxations some are compleat, some incompleat. The external Dislocation may happen several Ways, whether by an over-violent Extension, or by a Fall, or by a violent Blow; that makes the external Process rub upon the bottom of its Cavity. In this Case the Bone is dislocated outwards, or to the outside, and the internal *Coronides* Process stands in the Place of the external; the internal being then very low, whereas the external is much rais'd. The most certain Sign of an outward Luxation is, when the Arm is streight.

The other compleat Luxation is occasion'd in like manner by some great Fall, or by a Fall upon something that's very hard. In this Case the Arm is more bended or bow'd than it should be, and the internal Process touches the bottom of its Cavity; the Luxation falls not behind the internal *Condylus* of the *Humerus*, or the upper Bone of the Arm, and the external *Coronides* Process is plac'd in the room of the internal, and the inside of the Hand

and the Wrist is turn'd outwards towards the Back. Another very certain Sign is, that the Arm is always folded or bent in.

The incompleat Luxations are two in number, *viz.* one upwards, and one downwards.

To distinguish these two, we must remark, that in the first we feel an Eminence above, upon the external *Condylus* of the Arm; and in the latter, the two Processes of the *Cubitus* are hook'd in between the Proces of the Pulley, and the internal *Condylus* of the Arm.

In order to make a compleat external Luxation, you must set the Patient upon an unarm'd Chair of a middling height. If the Luxation is in the right Cubit, a Servant must get on the left Side of the Patient, and embrace him; another Servant on the right Side must grasp with both his Hands on the upper part of the *Humerus* or great Bone of the Arm, and a third Servant, plac'd just before him, must take hold of the fore-part of the Arm, a little above the Wrist, and keep both the Arm and the Hand in their natural posture. The two first Servants must pull both upwards and downwards, and the Surgeon takes his Place between the Patient's Legs. If the right Arm is affected, the Surgeon places the bending part of his left Arm four or five Finger's breadth under the luxated Cubit; then he pulls with all his force from the out to the inside, and so the *Cubitus* is reduc'd. If the left Arm is affected, the Surgeon places himself in like man-

manner on the inside of it, and with the bend of his right Arm pulls the dislocated *Cubitus* from the outside inwards.

To reduce a compleat internal Luxation, the Patient must be held by two Servants, one having hold of his Body, and the other of the upper part of his Arm. Then the Surgeon takes the Arm in his left Hand, and grasps the Elbow on the outside ; and with his right Hand takes hold of the Wrist, and so pulls the Arm with both his Hands, from the outside inwards, raising the Cubit forcibly upwards, so that the Patient's Hand is plac'd upon his Shoulder. By this means an internal Luxation is easily reduc'd.

The incompleat Luxations are not so hard to set. When the Eminence of the Elbow rises upwards above the Pulley, then you must push from above downwards ; and if 'tis hook'd in under the side of the Pulley, you must push that Eminence from below upwards, and that with greater Force, because the side of the Pulley is higher below than above. At the same time you must not forget the necessary Extension.

Every time you dress the Patient, make him bend and extend his Arm, for fear of an *Ankylosis* in the Cavity. As for the Dressings, cut your Plaster and Compresses in this Fashion. Take a Rag about sixteen Fingers breadth long, and six broad; fold it lengthways, and then upon the breadth, into four Doubles;

and cut it sloping, running along by th
to the four Ends, and then leave three
of the Cloth whole. As for the single
that is first apply'd, you must cut it
Compress, and cover it with a Defensi
apply it partly to the Cubit, and part
upper Arm: And the Compreſs ſte
warm'd *Oxycrake*, muſt be apply'd ſo
the Cubit and the Arm.

The moſt proper Bandage is the
which is made of a Roller with one
about five Ells long, and two Inches
apply'd to the lower part of the *Humerus*
then run in two Rounds or circular C
tions about the Arm, in order to defc
the Elbow. After that it makes two
Rounds about the upper part of the
and ſo paſſes to the iſide of the Elb
bend of the Arm. Then it re-paſſe
the inferiour part of the *Humerus*, o
Bone of the Arm, in making two little
from above downwards, and from bel
wards, till the whole Elbow or Cubi
ver'd. At laſt it riſes in *Doloires* alo
Arm to the Armpit, and concludes in a
or two about the Body.

CHAP. XIV.

The Bandage for Phlebotomy in the

THE Bandage for Blooding in the *A*
made with a Fillet of the breadth

Fingers, and long in proportion to the Arm. When you tie up the right Arm, you take the Fillet in your right Hand, holding it with your Thumb, your fore-finger and your middle-finger; and with the two other Fingers you keep fast the end of the Fillet, which ought to hang about half a quarter under the little-finger. Then you must join the Lips of the Orifice with the fore-finger and the middle-finger of the left Hand; after which, folding the two other Fingers, you push with the end of your fore-finger the Lip of the Orifice from the outside inwards; and with the tip of the middle-finger you draw the Skin from the inside outwards. This done, you apply the Compress with your right Hand, and hold it on with the fore and middle-finger of the left Hand. Then you put your Thumb behind the Elbow, holding your other two Fingers folded; and with your right Hand you place the Fillet upon the Compress with two Fingers, at the same time that the Thumb of the same Hand stays upon the Elbow: Then with the left Hand a little rais'd you make the Bandage, by taking hold of the Fillet that hangs on the inside, and pulling it from within outwards above the Elbow; then passing it over the Compress by lifting the two Fingers one after another. This done, you draw the Fillet above the Elbow, from the inside outwards, in order to make two or three Rounds upon the Orifice: And with the end of the Fillet held

held in the right Hand, you make a *Renverse*,
and at last tie the two ends together behind
the Elbow.

C H A P. XV.

Of the Bandage for an Aneurisma.

THE Bandage for the Operation of the *Aneurisma* (or Dilatation or Rupture of the Arteries) is made with a Fillet six Ells long, and two Inches broad : But still you're to observe, that when we fix a Measure, we only mean it of the generality and common Size of Men ; for in particular Cases regard must be had to the Age and Size of the Body. Before you apply the Fillet, you must apply a round Compress of four Doubles, and lay above that two other Compresses made crossways, being a quarter and a half long, and of the breadth of three Fingers. The Fillet being roll'd up to a round Ball, you take it in your right Hand, and place the end of it above the Elbow ; then you run it over the Compresses that lie in cross-fashion, and so conduct up and down in forming little *Doloires* both above and below, after having made several Turns within the bend of the Elbow. This done, it mounts upwards along the Arm in *Doloires* ; and at last you put a Compress eight Plaits thick near the Armpit, and after covering it with several *Convolutians*, you terminate in a round about the Body.

CHAP.

CHAP. XVI.
Of the Dislocation of the Wrist.

THE Wrist is compos'd of eight Bones, drawn up in two Rows, four a-breast; Three of the Bones of the first Row are receiv'd in a double Cavity in the lower part of the *Radius*; and the fourth, which is under the Bone that sustains the Little-finger, is not articulated. The Bones of the second Row are articulated by their lower Parts, with the upper Parts of the *Metacarpus*. Commonly these Bones are not dislocated but if the upper part, when they depart from the Cavity of the *Radius*; and this may come to pass inwards, outwards, and sideways. When they are dislocated to the inside, the Hand falls backwards, and if the Luxation runs outwards, the Hand bends inwards. When the Dislocation is sideways, the Hand turns sometimes to the little-finger, and sometimes to the Thumb.

Having thus laid down the Signs of a Luxation of the Wrist, we come now to shew how to set and reduce it: For which End, a Servant must take hold of the Cubit of the Patient above the Wrist, and draw it. The inside of the Patient's Hand must be spread upon a Table, drawing every Finger one after another to reduce the Tendons to their natural Situation. Then the Surgeon is to press the Eminence with the Palms of his two Hands from above downwards. The same is the

Method if the Luxation be on the inside
the Luxation is lateral, a Servant must
hold of the Arm by the lower *Cubitus*,
which the Surgeon takes the Hand, and
is right in making it turn to the side
opposite to the Elevation.

Having thus set the Wrist, you are
with three Fillets, each of 'em two Ells
and two Inches broad. Before you make
Bandage, it behoves you to apply a
Rag about ten Fingers breadth long, a
broad as the Wrist; and above that a
press of four Doubles of the same length
breadth. The single Rag must be steep'd
Vinegar and Water, and cover'd with
fensive made of the Whites of Eggs and
of Roses. You apply the Rag thus pre-
pared in a circular way, round the Wrist, and
the Compress above it after 'tis likewise steep'd
in Vinegar and Water. If the Disloca-
tion the inside, you must run the first Cast
Fillet from the out to the inside, and
make two Rounds upon the dislocated;
after that you descend obliquely upon
Hand, forming small *Doloires*; then pa-
ss between the Thumb and the Fore-finger;
the inside of the Hand, you come to cross
on the Wrist, and so ascend upwards by
loires: The Arm being bended in, you
at last to make fast above the Elbow
two or three Rounds, leaving the Elbow
cover'd. The second Fillet runs the
Co-

ourse; that is, it passes by the inside of the
and like the other, and terminates in the
wer part of the great Bone of the Arm, leav-
ng the Elbow bare. The third must be ap-
y'd over two Past-boards, guarded with their
compresses in which they are sew'd. These
stboards must be about six Fingers-breadth
ng, and as broad as the Wrist, one of them
ing laid on the inside, and another on the
tside of the Wrist. With this Fillet make two
rns about the Joint, and, without running it
tween the Thumb and Fore-finger, carry it
owards in *Doloires*, and terminate with the
rmer two, leaving the Elbow bare.

CHAP. XVII.
*of the Dislocation of the Carpus, Metacar-
pus, and Fingers.*

HE Bones of the *Carpus* are more apt to
relaxate than to suffer Luxation. But if
y of these Bones is dislocated, you feel a
rt of Cavity on the outside, and an Eminence
Rising on the inside. This Luxation is re-
ess'd after the same manner with that of the
rist, by placing the Hand upon a Table,
d making a pressure upon the Eminence.

All the three *Pbalanx*'s or Ranks of the
humb may suffer Luxation, and these Luxa-
ions are sometimes very easie, and sometimes
ry hard to reduce. Not long ago, I had
do with a Luxation of the middle Row of

the Thumb of a Boy, that gave me a great deal of Trouble. When I came to it I found the Thumb quite incurvated, very much shorten'd, and the Extremity of the middle Bone advanc'd very far in the side of his Hand under the *Tibenar Musch*. In order to set it, I plac'd his Hand upon the Table, and apply'd two *Cargesian Nooses* to the Wrist, and another upon the middle of the affected Bone, the former being stiffer than the latter. This done, I turn'd over the Hand upon the Table, and order'd the two Servants to be pull'd by two Servants, observing a while carefully, that a due Reduction rec'd Retension, Extension, and Impulsion, which I regularly put in Execution, or else never compass'd my End. The Noose upon the Wrist, was only to keep the Hand firm, and to make the back of the Hand strongly upon the Table. The other Servant pull'd the other Noose with all his Force in like manner apply'd all my Force in keeping the Impulsion with my two Thumbs.

Thus did I reduce it, but with a great deal of Trouble. After setting it, I made a large wad with a Fillet about an Ell long, after making three Rounds about the Wrist, I carry'd it down to the Extremity of the Thumb, and back again in small *Doloires*, in order to make a *Chiaste* (or Cross) upon the Joint of the Thumb. At last I made a circular Convexion round the Wrist; and in eight or ten

time the Patient made use of his Thumb.

Of the four Bones of the *Metacarpus*, those in the middle suffer Luxation both inwards and outwards, but not sideways : But those which support the fore-finger and the little-finger, undergo Luxation all the three Ways.

All the Bones of the Fingers may undergo Luxation inwards, outwards, and sideways, and are reduc'd upon a Table, like those of the Wrist, by making an Extension, and a Pressure upon the Eminences, as above. For the Bandage we make a half *Gantlet* (describ'd elsewhere) which serves for all the Joints of the Fingers. The Fillet should be three Ells long, and an Inch broad, and roll'd up to a Head. If the Luxation affords three or four Joints of the inferior parts of the Bones of the Fingers, you must make the half-*Gantlet* a whole one, by beginning to apply the Fillet on the outside of the Wrist, and running it towards the inside of the Hand. Then you pass it between the Thumb and the fore-finger, from within outwards ; after that you make a Cross upon the Article or Joint of the Thumb, and passing along the outside of the Hand, return by the inside to the outside again, running between the Thumb and the fore-finger, and so make a *Cbi* (or Cross) upon the Joint of the Fore-finger. Thus you continue the same Turns or Convolutions, and cross upon all the first Joynts of the Fingers, and after all, terminate in two Rounds about the wrist. If

only one Bone of any Fingare is dislocated, you must make the *Chiaste*, as in the Bandage of the Thumb.

CHAP. XVIII.

Of the Fractures of the Carpus, Metacarpus, and Fingers.

The Bones of the *Carpus* are seldom fractur'd, unless it be by very violent Blows; but those of the *Metacarpus* and the Fingers are easily broken. To reduce them, you must place the Hand upon a Table, and order a Servant to pull the Wrist upwards: The Hand being thus supported, you must pull all the Fingers, one after another, in order to restore the Tendons to their Primitive Situation.

The Bandage of the *Metacarpus* is made with a Fillet two Ells long, and two Fingers broad, roll'd up to a Head. With this you make two or three Turns round the Wrist; then descending obliquely, making two *Doloires*, and passing from the inside to the outside of the Hand, you afterward run the Fillet 'twixt the Thumb and the Forefinger, and make a small *Doloi're* above the Hand. After that, you run from the out to the inside of the Hand, and form another small *Doloi're*, to be three times repeated, so as to make a *Spica*. Upon the *Metacarpus* you must lay a Compress, with its Pastboard lew'd together, there being in the Pastboard

and

and Compress a Notch or Hollow cut betwixt the Thumb and Forefinger. This Compreſ is to be laid over the firſt turn of the Fillet, and with the remainder of the Fillet you make two *Convolutiones* of a *Spica*, paſſing as in the firſt *Convolution*, between the Thumb and Forefinger: Then you re-ascend to the Wrist, after making two Turns to cover the *Spica*; and when you are at the Wrist, you make fast the Fillet with two circular Rounds, and after all hang the Arm in a Sling.

If the Thumb is fractur'd, you must tie it with a Band or Fillet an Ell and a half long, and of the breadth of one Finger. After making two turns round the Wrist, to fix the Fillet, you must obliquely roll the Thumb, having firſt laid upon the Fracture a little Compreſ ſteep'd in a convenient Liquor. This done, you make three ſmall turns round the Fracture, observing the ſaine Course upon the two *Phalanges*, if two Bones be fractur'd. After this, you apply four little Compreſſes, the breadth of the Thumb, to be laid conveniently one againſt another, with two ſmall Paſtboards of the ſame length and breadth with the Thumb, one to be apply'd on the outside, and the other on the inside. With the remainder of the Band or Fillet you are to cover the Compreſſes and Paſtboards in little *Doloires*, mounting upwards; then make a *Chi* upon the Joint of the Thumb, and at laſt circulate round the Wrist.

If only one Row of one Finger is fractur'd, you must tie it tight and strait, and by it self: If two Rows are fractur'd, you must tie it up with another Finger, keeping 'em both strait. If the first four *Phalanx's*, or those of the middle are broken, you must bend or fold the Hand, and the Fingers resting one upon another, must be ty'd with a Fillet an inch broad, and three Ells long, making two or three *Convolutions* at the Wrist, from the inside outward, crossing on the external part of the Wrist, then passing to the inside of the Hand, near the Thumb, and above the four folded Fingers, just by the juncture of the *Metacarpus*, leaving the four Knuckles uncover'd, you make 3 circular Rounds about the Fracture, and at last descend to the Points of the Fingers in little *Doloires*.

After having roll'd up the four Fingers thus bent, and resting with their ends equal to one another, you're to apply in the inside of the Hand a Compress, with a Pastboard of the same length and breadth with the Hand, including the Wrist, and made a little narrower towards the *Carpus*. The Compress thus apply'd along the inside of the Hand, from the tips of the Fingers to the Wrist, must be afterwards made fast by the same Roller, beginning to roll from the ends of the Fingers, and re-ascending in *Doloires*. In this Course the Roller must cover all the other *Convolutions*, and then repass between the Thumb and the Forefinger, after which 'tis fasten'd at the Wrist.

CHAP.

C H A P. XIX.

Of the Bandage of the Salvatella.

TO the description of the Disorders of the Arm and Hand I subjoin, by way of *Concion*, those of the *Salvatella*, as being a Relation to the Hand. Some pretend, that the opening of the Vein that lies between the little finger and the *Medicus*, is a sovereign Remedy against a *Quartan Ague*. Perhaps some may have found it successful; but, for my own sake, I try'd it upon my self for a *Quartan Fever*, and found no benefit by it. However, if ere be Occasion to open it, you must know, a proper Bandage is done with a Fillet an Ell and a half long, and two Little-fingers broad. At before you make the Bandage, you must perform the *Venæsection*, by putting the Hand to hot Water, casting a Ligature upon the Wrist, and stopping the Vein with your Thumb. After the Detraction of the Blood, apply a Compress upon the Orifice, and if it be the right Arm, lay with your left Hand a Fillet over the Compress, leaving one end of it hanging down under the Little-finger, and with the other end you're to cross upon the end that hangs down, and upon the Compress. This done, you pass to the upper part of the Hand, between the Fore and the Middle-finger, and then make a turn upon the Ring-finger, and after that, a Cross upon the Root of the same Fin-

Finger, from within outwards ; next pass under the Little-finger, from the out to the inside, pulling the Fillet under the inner part of the Thumb : With the End that hangs down under the Little-finger you are to make a *Reverse* above the Compress, and at last tie this End to the other that's under the Thumb.

C H A P. XX.

Of the Fracture of the Sternum.

A Fracture of the *Sternum*, or *Breast-bone*, discovers it self by these Signs : In the first place you'll have an Unevenness and Inequality in the fractur'd Part : Secondly, it yields to your Finger when you touch it ; and thirdly, you'll hear a cracking Noise, and when you thrust it down you'll perceive a Cavity, and at the same time the Patient is extreamly pain'd in that Part, and troubled with a difficulty of Breathing, by reason the *Pleura*, the *Mediastinum*, and the *Lungs*, are press'd, upon which occasion he spits or hawks up *Blood*. For the Reduction of the Breast-bone, you must lay the Patient on his Back, on a Quilt, or some coarse Coverlet, with something that's hard underneath, such as a Kettle, a Jar, a piece of Stone, or the like. This done, the Surgeon comes, and with his two Hands presses as much as he can the two anterior and lateral Extremities of the Ribs, from above downwards,

wards, by which means he raises the Splinters or Pieces of the *Sternum* upwards. On such Occasions you must bleed the Patient as much as is necessary, and observe a very exact Regimen. The proper Bandage of the *Sternum* is the *Quadriga*, which signifies four Crosses, or four X's, which Crosses are plac'd at each Shoulder, both before and behind. If there be a Contusion along with the Fracture, steep the Compresses in *Wine* wherein *Roses* and *Wormwood* have been boil'd. The Compresses must be doubled four times, twelve Fingers-breadth long, and eight broad. Their figure must be triangular, and the Point downwards, in the form of a Hanger. After the application of the first Compress steep'd in *Aromatick Wine* hot, if there be an Inflammation, you must make use of a Defensive made of the Whites of Eggs beat up with a little Vinegar. Next to the first Compresses, is a Pastboard of the same figure with the Compress, having a Compress sew'd with it.

The Bandage is made of a Filler or Roller with two Heads, five Ells long, and four Fingers broad. You begin the Roller under the Armpit, then ascend and cross upon the Shoulder, then passing just upon the Neck, you conduct the two Heads, one before, and the other behind, under the Armpit. This done, you cross, and direct each Head, one before and the other behind, to the other Armpit, grazing in the passage near the Neck; at last you terminate

nate in a circular Turn, if so be that nothing but the *Sternum* is hurt: But if any of the upper Ribs partakes of the Fracture, you must make the *Thorax*, which is nothing but turning the Fillet to each side, by making *Doloirs* from above downwards, and after a sufficient number of *Convolutions* round the Breast, making 2 or 3 circular Rounds above the Hips.

C H A P. XXI.

Of the Fracture of the Ribs.

AS we have two sorts of Ribs, so these may be broken different ways. The long or true Ribs are all over boney, and may be fractur'd in any part; but the spurious Ribs being cartilaginous before, and boney behind, receive Fractures behind, and commonly bend forwards, so that all the Ribs may break outwards; but forwards and inwards they are sometimes not broken, but only bent and split. 'Tis possible likewise that they may be broke and split inwards, in which case the Splinters press and gall the *Pleura*, and the Danger is great: But if the Rib is simply fractur'd, and the *Pleura* is not rent, nor much press'd or loaded, *Hippocrates* says, there's no danger; and in such cases advises to eat much, on pretence, that the Belly, when inoderately full, restores the natural posture of the Ribs, whereas when 'tis empty they want that Support.

port. 'Tis the spurious Ribs chiefly that are reliev'd when the Belly is full.

The Fractures of the Ribs are easily distinguish'd. If the Fracture falls outwards, in handling 'em one after another you'll hear a crack-ing. But if the Pain is very great, and the Patient very fat and corpulent, this Sign is not so easily pereeiv'd. A Rib fractur'd to the outside may be cur'd in 25 days; but if the Fracture is inwards, the Patient feels a violent Pain, we call *Pungitive* or *Pricking*, and which is much more violent than that of a *Pleurifie*. He has great difficulty in breathing, and perpetually spits Blood; in which case 'tis necessary to administer the Remedies with the earliest expedition. But the greatest difficulty of all, is when the Splinter is sunk in the inside, for then 'tis a very hard matter to raise it. *Paræus* proposes a Remedy of *Rosin*, *black Pitch*, and *Oatmeal*, with *Mastich* and *Aloe*, all melted, mix'd, run upon a new Cloth, and so apply'd to the Fracture. This must lie on for some time, after which you snatch it off with great force, bending upwards; and this you continue to do several times, till the Patient finds relief, which you'll perceive by his breathing more freely: But if the Symptoms continue, viz. an exquisite Pain, a Fever, a Cough, and a spitting Blood, you will then be forc'd to make an Incision upon the Rib, and raise the Splinters with Hooks, and with your Incision-nippers cut off the sharp Points that gall so much. All this must

must be accompanied with the general dies, and a good Regimen.

For a due reduction of Ribs fracturwards, you must hold the Patient upright the Surgeon embracing him by the Side make him bend or lean to the sound S blow thro' a Horn in the Hand of the Side, after which he makes the Extent Counter-extension with his Hands up fractur'd Side, pulling with each Hand Ribs towards him: By this means the tendons will re-unite, and the Bones thus reduced must be kept up to the Reduction by a strong Bandage, call'd the *Napkin*. This place when only one Rib is broken; several Ribs, and those of the superiour are broken (which I have oftentimes seen) the *Napkin* will not do.

But before I go further, I am oblig'd to scribe the Apparel or Dressings of a Fracture of a Rib.

When any Accident accompanies the Fracture, the Bandage is made with a Napkin doubled, if the Fracture is high three times if it be in the middle of the Rib or in proportion to the age and size of the Patient. The Napkin thus folded, must be beat up to two Heads. This done, you beat it or three *Whites of Eggs* with a little *Oyl*, and a small quantity of *Vinegar*; at a moderate heat in Summer, and a hot heat in Winter, steep in it five Linnen Co

, all of four doubles, four of which Compresses should be as long as the Ribs, and two fingers broad; and the fifth ought to be a little longer than the rest, and of the breadth of Fingers. The Application is in this manner: The two first are laid sideways, according to the length of the Ribs, so as to touch one another; overthese you lay the other two, the form of a St. Andrew's Cross, and these at Compresses above all. And if 2 or 3 Ribs be broken, the same number of Compresses will serve, only they must be larger. If the patient coughs violently, 'twill be proper to lay two Compresses strengthen'd with Pastard, and lay 'em crossways (like the furrows) over the Linnen Compresses.

The Napkin being roll'd as I directed above, you hold it in both your Hands, and lay even or equally upon the Compresses. After that, you put a Scapulary to the Neck, and a turn the Roller equally, by making circular *Convolutions* round the Breast, sustain'd by the Scapulary both before and behind; then make one end of the Swath pass over the other, and at last make it fast with Pins in the Idle and the two sides of its Extremity, or sew it, to hinder its going downwards. If Fracture affects two or three Ribs, you must make a strong firm Bandage, such as the *driga*, which I describ'd above for the fracture of the *Scutnum*.

C H A P. XXII.

Of the Luxation of the Rib

IF the Ribs suffer Luxation to the you'll perceive a Cavity on one side small Eminence on the other ; besides attended with a Difficulty of Respiration the Patient can neither bend nor erectly ; so that it calls for a speedy Cure. Luxation happens in the upper Parts, keep the Patient streight and extend make him hang by his Hands upon some Flier or some Flier of a Window ; after which Surgeon must, with the Palms of his hands, press the Eminences of the Ribs from inwards. If the lower Ribs are dislocated must make the Patient bend his Body, the Palms of his Hands on his Knees, Surgeon pushes the Ribs as above. dage is the *Quadrige* ; only care must to guard the place whence the Bone proportional Compresses, apply'd let on the transversal Processes of the Vertebrae.

C H A P. XXIII.

Of the Fracture of the Vertebrae

THE Body of the *Vertebrae* may break and sink inwards, and in regard the Spinal Marrow does then endure a

affords but an ugly Prognostick, for the Disease is incurable, and a'most always mortal: Upon which consideration I chuse to pass over this Disorder in silence, and shall now confine my self to the Fractures of the Spinous Processes.

We distinguish, that these, and not the *Vertebræ*, are broken when no grievous or very troublesom Symptom attends, and when in pushing a Finger upon the tip of the Process we feel the Splinter of the Bone move and shift its place, and instead of a Fracture, perceive a Cavity with a small cracking. In this case the Patient feels more Pain in endeavouring to bend his Body than when 'tis erect, by reason that, in bending the Body, the Skin stretches it self, which makes the Points of the Bones prick and twitch the Part. If these Bones are quite separated from the *Periostium*, you must make an Incision, and take 'em out. These Fractures are easily cur'd.

To procure the Union of the Bones, and make the Splinters hold, take a small piece of new Linnen cover'd with Glue, and lay it on the Fracture with a good Linnen Compress doubled four times above it, and above that a Pastboard guarded with its Compress, and sew'd together, with the *Quadriga* Bandage over all. I here omit speaking of the internal Luxation of the *Vertebræ*, by reason that it is incurable; and therefore shall shew by the bye how to reduce a Luxation of the *Vertebræ* in the external Part, and an incompleat Luxation

tion of the Neck, which I have sometimes met with in my Practice.

CHAP. XXIV.

Of the External Luxation of the Vertebræ.

TO reduce the *Vertebræ* dislocated in the External Part, you must place the Patient on a Table, flat upon his Belly; then take two Fillers, each of 'em 3 Ells long, and of the breadth of about 8 or 10 Fingers, and run one of 'em over the Hanches, making a single running Noose, which a strong and robust Servant must pull downwards with all his force; and at the same time make another Noose over the Shoulders, which another Servant is to pull with all his force. While the two Servants pull equally, the Surgeon must push with his two Hands the *Vertebræ* that stands most out: If he can't perform the Reduction by that means, let him wrap up in Linen two little Sticks of the bigness of a Finger, and as long as four Fingers, less or more, and apply these to the Sides of the *Vertebræ*, making a pressure upon 'em. Here he must take care not to press hard upon the Extremities of the pointed Processes, for fear of breaking 'em.

When the *Vertebræ* is reduc'd, you'll know it by this, that it is equal to the other neighbouring *Vertebræ*. After the Reduction is perform'd, you must sustain it with two Compresses

resses of six or eight Doubles, each of 'em 8 Fingers-breadth long, and two Inches broad. Each of these Compresses should be strengthened with a small Plate of Lead much of the same length and breadth, sew'd in, and then applied to the lateral Parts of the *Vertebræ*, between the Spinous *Apophyses*. The Patient must lie still as long as ever he can, and the Bandage must be the *Quadrige*; of which above.

C H A P. XXV.

Of the Fracture of the Os Sacrum.

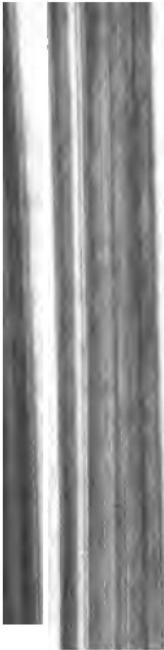
THE *Os Sacrum* may suffer Fractures in all its Parts. If the Fracture happens in the middle of its *Spina*, 'tis mortal; but in the other Parts 'tis not always such: As we learn from Instances in the Army, and in Hospitals.

C H A P. XXVI.

Of the Fractures of the Coccyx.

THE *Coccyx* is compos'd of three little Bones, the first of which is join'd to the *Os Sacrum*; and at the end of these little Bones we have a small Cartilage.

To reduce this Fracture, you must put two Fingers of the left Hand into the Fundament, (having first par'd your Nails) and thrust 'em to the fractur'd Part, in order to push the broken



• and pierc'd both of 'em in the n
few'd on the upper side to a Fillet
circular Convolutions round the Be
two lower Corners must join two st
bands that are to pass between the
return on the fore-side, to be made
Fillet that makes the Rounds. E
Compress, there must be another v
~~bord~~, sew'd together and perfora
manner, and (like the first) furni
upper side with à Swath, to circi
the Body ; and at the lower, with
Fillet, that are to pass in like mann
the Groins, and terminate upon the
makes the Rounds about the Body.
lets and Compresses being thus pre
begin with the application of the pi
nen of the same figure of the Com;

cident forbids it. This done, you roll the
cular Fillets for the Body, and the two pair
Fillets that pass between the Groins, both
Compresses being sew'd to the one on the
per side, and to the other on the lower.

The Patient should have under him, as long
he can, a Pan that has a soft Roll or Cushion
par'd for the Purpose, till the *Callus* is for-
ed; and if he gets out of his Bed before the
Callus is made, he should seat himself upon a
rforated Chair, with such a Roll to it.

CHAP. XXVII.

*If such Bandages as are proper for the
Disorders of the Privy Parts.*

THE Bandage for the Yard, is a simple
Contentive Bandage, made of a Cloth or
ag laid upon the Yard, with a Compress of
e same figure, both of 'em being cut into a
lf Cancer, after this manner: Take a piece
Linen ten Fingers-breadth long, and six
oad; fold the Linen first in two, then fold it
second time into four, and a third time re-
ld it angular ways. This done, cut the angle
oint, which will make a Hole for the Urine
pass; a Fingers breadth under the Hole cut
e Linen in a streight Line, and at last make
e Ends even. Thus you have the *Demi-*
Cancer, which represents a Cross perforated in
the middle.

The Bandage is made with a Band or Fil about twelve Fingers-breadth long, and ab an Inch broad : In the end of the little Fil you must make a Hole, that the other end n pass thro' it. The Linen Cloth and Compr being soak'd in a proper Liquor, apply 'em the Yard, so that the little Hole of the Co press and the Cloth may come just before end of the Yard. Before you apply the Fill you must cut the unperforated end in two the length of four Fingers-breadth, and the new-cut ends must be pass'd thro' the Hole the other end, so as to form a sort of a Ring then you roll moderately tight, and in litt Doloirs conduct the Fillet to the Root of t Yard, where you make it fast, by tying t two ends together.

A Remarkable Observation.

Now I am upon this Subject, I shall he take occasion to relate the History of *Phimosis* which happen'd to a Waterman th brought Salt from *Guivaudan* to *Compeign* Being at *Paris*, he shew'd me his Yard, up which I saw a *Phimosis* with a very great Inflammation : He could not stay to have dress'd, but went on board, and was 8 or 1 days upon the Water without having it dress'd after which time he came again to me. In the mean time the *Gangrene* had over-run all th Nut and Prepuce for a Fingers-breadth. In mediast

diately I order'd him to Bed, and after making him observe an exact Regimen, feed on baths and Decoctions, and confin'd him to water for his only Drink, by reason his Fever was very high, I found him a little alter'd ; on which I set about redressing the most urgent Evil, and began to make Incisions along the Glands and Prepuce. The Incisions being made, I applied to 'em *Ægyptiacum* diluted in cold *Spirit of Wine*, with a little common Salt and *Venice Treacle*. With Rags dipt in this liquor I bath'd the Part for half a quarter of hour, as hot as he could suffer it. I likewise soak'd my Compresses in the same Liquor, and made the Bandage describ'd above. He was bled twice or thrice a day. The first Incisions were made about two in the Afternoon on Friday, and in making 'em I run about two fingers into the quick : About six that Night I took off the Dressings, and found the Gangrene had surmounted and cover'd the Incisions. At even a-Clock that Night I open'd the Dressings again, and made Incisions afresh, striking the quick. On Saturday Morning, at five Clock, I perceiv'd the Gangrene still gain'd ground, and it continued to encrease till Monday at two in the Afternoon, that it stop'd. I may say, without stretching, in the whole course of my Life I never smelt such a noisome stink ; and in the Inn where he lodg'd he was lig'd to shift his Room three or four times, no-body could come near the House where he

he was: And as for my self, who lost my
for three Days and three Nights that I
ded him, a'most always my Mouth and
were so infected with the Stink, that
oblig'd to be often using Spirit of Wine
wash my Mouth and Nose, and expel the
lignity that still haunted me. This Gar-
carried off half his Yard, and the whole
stance and Body of the Glands; so much
putrified with the Corruption. In pro-
time he was very well cur'd, and after
trization, considering 'twas still cold We
instead of a single *Suspensorium*, I made
Bag for his Yard of Lamb-skin, lin'd w/
Wool, in order to recall the natural He-

C H A P. XXVIII.

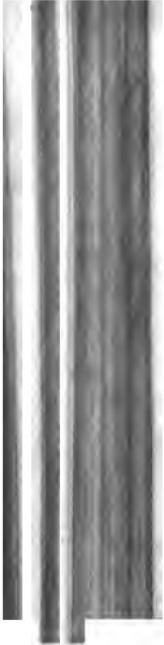
*Of the Bandages proper for the Disora
the Fundament and adjacent Parts*

TH E Bandage for a *Fistula* in the
is the same with that for a *Fracture*
the *Coccyx*.

The Bandage for *Lithotomy*, or Cutt
the Stone, made use of in the *Hotel de L'Paris*, is a Sling with four Heads, mad
piece of Cloth an Ell and half long, an
Fingers broad. To cut it, they fold it in
and so cut thro' from the end, leaving
the breadth of ten Fingers uncut. Thi-

ge is assisted by a *Demi-Scapulary*, which in at Hospital is call'd *le Collier de Misere*. The *Demi-Scapulary* is made of a Fillet three quarters of an Ell long, and two Inches broad, fold in two, cut at the two ends, and put round the Patient's Neck : Then you take the Sling with four Tails, and having first laid upon the Ulcer of the *Perineum* little Compresses of our Doubles, in the form of a Halfmoon, you lay over it the uncut part of the Band, and taking each of the Tails of the upper side, connect 'em up on each side, moving from the inside to the outside, and make 'em fast behind the back to the *Demi-Scapulary* that hangs down from the Neck. The Tails of the lower side you pass between the Thighs, and moving them without inwards, make 'em fast before to the *Collier de Misere*, above the Knots of the former Tails. Such is the most proper bandage for *Lithotomy*.

The Bandage for the *Scrotum* is the *Suspensum*, viz. Take a piece of Linen twelve Fingers-breadth long, and equally broad, fold it in two, and cut it in the form of a Mask, leaving the upper part square, and cutting one of the sides in the form of a Semicircle, running till narrower and narrower, till you end in a Point; then cut this Point obliquely on the side of the fold of the Linen, from without inwards, for about two Inches long: This done, join the two Points, and sew 'em together, having first folded the upper part of the Linen to

FAST WITH ROUNDS TO A GIRDLE ROUND

The Contentive Bandage, cal
is nothing but half a *Suspensorium*.
ly three ends to be made fast by, &
lie above, as in the former, an
passes by the inside of the Thigh,
fast upon the outside, with anot
the Girdle round the Body.

Thus I have finish'd what re
Bandages of the upper Limbs, sc
ceed to the lower.

CHAP. XXIX.

*Of the Fracture of the Thigh, w/
upper Extremity, the Mid
Lower End.*

my own Judgment, I consulted M. *Petit*, a Surgeon; upon which we compar'd one Thigh with the other, and found 'em of equal length, & by reason of the great Inflammation, we did not hear any cracking; but the Extremity of the head of the Bone appear'd very white in the inner part, near the Share-bone: us continuing in doubt whether it was a fracture or Dislocation, we concluded to use violent Means, and accordingly made the bandage call'd *Spica*, with a Roller done up one Head that was about five Ells long, and two Fingers broad: We applied four or five triangular Compresses of four Doubles, laid one over another; the Plaits were upon the joint, and one of the lower Angles along the thigh: Above these we laid a Compress of eight Doubles, three quarters long. The Compresses were soak'd in hot Wine. The triangular Compresses were plac'd in the fold of the joint, and the great Compress above 'em over the Thigh, crossing the two Heads upon the articulation of the Thigh-bone with the *Ischium*.

After all, we made the Bandage, which I sign to describe when I come to speak of Luxation of the Thigh-bone. Seven or eight days after, the Bandage broke loose, and took off the Dressings; then the Inflammation of the Thigh was quite gone, and as I took hold of the Thigh with my two Hands, by the upper and lower end, and made a strong pressure, I heard the cracking of the Bone. Upon

that discovery, to make amends for former Omissions, I made the *Spica* Bandage, and the *Geranium*, with four longitudinal Compresses, one of which was thicker than the rest, soak'd in Aromatick Wine, and laid under the Cavity of the Thigh. I applied under the Thigh the Roller with two Heads, and cross'd upon the Joint; then I run it from behind forward above the Hanch, and repass'd again from before backwards along the first Turns of the Roller, moving equally to the Joint. At every turn of the Roller I form'd small *Doloires*, one on the inside, and another on the outside of the Thigh; thus continuing as I began, I still carried it from behind forwards, and brought it back to run upon the Thigh, repeating the little *Doloires* three or four times, which form'd the *Spica*; and under the *Doloires* I repeated the *Geranium* in two circular Convolutions round the Thigh, crossing upon the *Spica*, and turning the Heads, one to the inside, and the other to the outside; at last I conducted the Roller in Rounds about the Body.

Oftentimes the Thigh-bone is fractur'd in the middle, and sometimes the Splinters of the Bone lie one upon another: In such Cases the Hands not being strong enough for the Extension that's requisite, we must have recourse to Gins or Nooses, one near the Knee, and another by the Groin, the Parts being guarded about with good Compresses under the Nooses, to prevent their galling. These Nooses must

: pull'd by two Servants with all their force, ie pulling upwards, the other downwards, in streight line, observing carefully that the bigh is neither rais'd nor lower'd. The Extension being thus made by the Servants, the Surgeon gives the Conformation with the ulms of his two Hands, raising the Splinters om below upwards, with the two *Thenar* uscles under his Thumbs, and the posterior rts of the Thigh under the eight Fingers of e two Hands, which he is not to move.

To know if the Extension is duly perform'd, u must compare the affected Thigh with e sound, and when the one Limb is just as ng as the other, 'tis a sign the Splinters are engag'd and united. Things being carry'd us far, both the Surgeon and the Servants st take care to keep all tight, without gi-
ng way any where, and to keep the Part actly in the same Figure, while a third Ser-
vant applies a piece of Linnen of a breadth
portionable to the Thigh, and about eight
ingers long. There being such difference of
lk and size, according as the Patient is thin
corpulent, 'tis impossible to fix the extent
the Dressings to one Standard. As for this
ce of Linnen, it must be so large as to co-
r all, and the two Ends must over-lap an
sh. The Cloth should be dipp'd in a De-
sive before 'tis apply'd. After this Appli-
ion the Surgeon is to make a Bandage with
or Fillets or Rollers, the first of which should

be four Ells long, and the breadth of four Fingers over. All the Rollers, and all the Compresses, must be soak'd in hot Oxyrate, or Vinegar and Water. If the fractur'd Bone leans to the inside, the Surgeon places himself on one side, and indeed the outside if he can. If the Fracture is round, you must apply the end of the Roller to the solid part of the Bone, as I told you in speaking of Fractures of the Arm; and if 'tis oblique, you apply it to the Fracture it self. The Surgeon takes the Fillet well roll'd in the right Hand, and unrolls it as much as the breadth of six Fingers; then he takes the unroll'd end in his left Hand, and holds it firm with his Thumb and his Fingers, resting what is unroll'd along his Arm. In this Fashion he applies that end to the Fracture, and the whole Security of the Bandage depends upon this first end.

This ought to be minded as a general Rule in the rolling of any part whatsoever. The Extremity of the Roller being held tight upon the Fracture, you raise with your right Hand that part of it that rested upon the left Arm, placing your Thumb upon the middle of the Roll, and pulling very equally till you have made a Round, and secur'd the End; then you make a second Round in the same manner, pulling always equally. *Hippocrates* frequently cautions not to make the first Convolutions too tight, and withal advises to make 'em conformable one to another. And with this

this view we must ask the Patient whether he finds it too tight or too slack. After making the second Convolution, you unroll about as much as will go half round the part; and the Roller being held by the left Hand rais'd, the right Hand then takes it, and holds it in the same Posture without moving, till the left Hand has grasp'd the part: This done, the right Hand sets the Roller a-going. After three Convolutions upon the Fracture, you mount upwards with small *Doloires*, forming renvers'd Turns either on the inside or the outside of the Thigh. Thus you ascend to the Groin, and spend the rest of the Roller in two Rounds about the Body.

The second Band is apply'd like the first, from the outside to the inside. After two circular Convolutions upon the Fracture, it descends in small *Doloires* and renvers'd Turns, then it passes under the Ham, and makes two Rounds under the *Rotula*, about the upper part of the *Tibia*. This done, it re-ascends to the Groin, in *Doloires* a little larger than the former. This second Roller should be as broad as the first, and four Ells long. The part that's thinnest and falls off, should be bolster'd up with transversal Compresses; (of which above.) After the lower Parts are made equal to the upper by these transversal Compresses, you must apply longitudinal Compresses sixteen Fingers-breadth long, and the width of four Fingers broad, for a Man of a common size. The

The third Roller must be three Ells long, and apply'd from the inside to the outside, just contrary to the former two. It makes a Convolution round the Fracture, and rises in little *Doloires*, with small Intervals, to the Groin, after which it gives a round or two about the Body. These three Rollers being thus apply'd, you're then to clap two Pastboards on the lateral Parts, one on the inside, and another on the outside, all along the Compresses, not touching one another, but leaving an interval of a Fingers breadth. These Pastboards must be tied on with three Ribbons, as in the Fracture of the Arm, beginning with the Ribbon in the middle, for the Reason mention'd heretofore.

This middle Ribbon you take in one Hand on the outside of the Thigh, and with the other you make two Rounds one over another; and then make fast the Ribbon on the external lateral part. After that you manage the other two Ribbons after the same manner. This done, you come to apply the Junks, which must be of a length proportionable to the Age of the Person.

In preparing the Junks, you must observe, that they ought to pass above the breadth of three Fingers under the Ankle. To make them, you must have Rye-Chaff, with little Rods of the thickness of one's little Finger. Having put the Rods in the Chaff, you take a Fillet or Band that's longer than the Rods,
and

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and after fastening it at one end, you surround the Chaff and Rods with the rest, and make fast at the other end.

As there's a necessity of two Junks, so that on the inside of the Thigh ought not to be shorter than the other, and not reach further than the Groin ; whereas that on the outside should go the breadth of three Fingers above the Hanch.

The Rods thus prepar'd, must be put lengthways in a piece of Linnen Cloth, and enclos'd by it tightly and equally.

To make the Junks surer, they should be sew'd in with the Linnen from one to the other. For the Thigh, the Linnen Cloth should be three quarters of an Ell long, and for the Leg half an Ell. The Junks must be thus wrap'd to half the bigness of the Thigh and of the Leg. Under them you must put six Ribbons, and guard off the Unevenness of the inside with Compresses, both on the inside and the outside of the Ham, and above the *Gemelli* Muscles.

In the course of Practice, 'tis of the last Consequence to make all the Parts of an equal thickness, and make the Junks bear equally above and below. You must put longitudinal Compresses of seven or eight Doubles on the anterior Parts of the Thigh and Leg, and then guard the Foot with a good Compress dipp'd in *Oxycrate* heated : After which apply a sole of Pastboard, with a Ribbon run thro'

the middle of it, to receive the Foot, and another Ribbon at the end. This done, a Servant comes and makes a Pressure upon the middle of the Junks, on each side, to bring 'em as near together as may be ; and the Surgeon ties the Ribbons, rememb'ring still to begin with the uniddle Ribbon. The two Ends of the Ribbon that's run thro' the middle of the Sole, must be made fast at the lateral Parts of the Leg, and the Ribbon at the end must be tied to the first Ribbon above.

Hippocrates, who forewarns us so often of the Danger of making the Bandages either too tight or two slack, gives us a certain sign of the due tightness of the Bandage, *viz.* the Inflammation and rising Softness of the lower Extremity, whether the Foot or the Hand. So that if the Foot is not at all inflam'd, you must immediately undo the Dressings, for fear of a false *Callus* that may afterwards be unretrievable, and so begin again. If the inferior Extremities are very much inflam'd, and have a hard Tumour upon 'em, you must slacken the Rollers ; for daily Experience shews, that too tight a Bandage is follow'd oftentimes by a mortal Gangrene, and many other Accidents.

'Tis highly incumbent upon a Surgeon to take care of this Circumstance, without being influenc'd by the Complaints and Cries of the Patient ; for some Patients make a great deal of Noise and Whining for a trifling Pain, and

lers are quiet under the heaviest Dis-
so that no Rule can be taken from the
ft of the Patient.

he Patient cry or roar, or say what he
this is still a certain Rule, That if
gh is right set, if no Splinters are out
place, and the Bandage is right made,
Hours, all or the most considerable
the Pain will cease, and no Itching or
disturb the Patient, which sometimes
cease of a Gangrene. If things be in
ture, without any sign of an Impor-
or the like, do not offer to touch the
e or the Bandage till after the 9th or 10th.
Some do a great deal of harm by un-
the Bandage too soon, to moderate
isling Uneasiness. But in one Word,
I advise all young Surgeons not to
he Bandage, unless it be too strait,
Pain and other Accidents proceed com-
from an over-bearing Stricture.

uch for the Fracture of the upper end
ddle of the Thigh-bone. As for the
part, it may be fractur'd either to the
r to the outside. If to the inside, the
ft of the Roller must be made on the
and so you go on, observing the same
s as in the Fracture of the middle of
ight-bone. After making three Turns
the Fracture, you ascend in small Do-
nd renvers'd Turns to the Groin.. The
Roller you begin to apply like the first,
and

and after two Rounds about the Fracture, conduct it under the Ham, and make a Turn round the upper part of the *Tibia*: Then leaving the Knee unroll'd, you ascend and terminate at the Groin along with the first. This done, you apply the transversal and longitudinal Compresses, and compleat the Operation with the last Roller, which must run from the inside to the outside, in order to restore and re-instate the Muscles. At last you apply the Pastboards, Junks and Sole, as in the Fracture of the middle.

C H A P. XXX.

Of the Luxation of the Thigh-bone with the Ischium.

THE Thigh-bone is dislocated four Ways, namely, inwards, outwards, forward and backward. In the articulation with the *Ischium* there happens no incompleat Luxation from external Causes, as in the Cubit, the Wrist, &c. by reason that its Cavity is round, its Edges high, the Muscles very strong, and the head of the Bone very round, so that it can't rest upon the edges of the Lips of its Cavity; and the Strength of the Muscles is such, that they will not suffer it to rest part without and part within the Cavity.

Indeed, an incompleat Luxation may happen from internal Causes, by virtue of a Relaxation

Dislocations and Bandages. 401

Laxation of the Ligaments, which being drencht by the Moisture that comes from the Habit of the Body, may insensibly slacken and extend themselves.

The Luxations of the Thigh-bone being either internal, external, anterior or posterior, I begin with the internal.

The most frequent Luxation is that of the internal part upon the Hole of the Share-bone, by reason of the hollow cut in the internal lateral part of the Cavity of the *Iscbium*.

We know that the Thigh-bone is dislocated in the internal part, when the affected Limb is longer than the sound one, the Knee and the Foot turn outwards, the Patient can't bend his Leg, and in the Region of the Groin we feel the head of the Bone sticking. In this case the Leg is longer than at other times, because the Head is not in its Cavity : And as for the Knee and the Foot, their turning outwards, 'tis common to all Bones, that the inferior Parts turn outwards when the Head is luxated to the inside.

After thus distinguishing the internal Luxation, we proceed to the setting Part ; for which end we order the Patient to be laid upon his Back on a Table or a Bench, with a Hole in it, opposite to the Patient's Groin, in which we put a Peg about a Foot long, and half as thick as one's Arm, cover'd with Linnen. This Peg we drive forcibly into the Holes, so as to make it firm and tight ; so that after raising
the

the Patient's Testicles, 'twill serve to push Bone from the inside outwards. Under Peg we have a Noose, which assisted by Peg, draws the Bone from the inside outwards. At the lower part of the Thigh we have another Gin or Noose apply'd to the external lateral part. We run in the Heads of the Nooses from the outside inwards, and the pull from the inside outwards, the Person who pulls being always a strong robust Man, and plac'd on the outside of the Thigh.

The Places upon which the Nooses are apply'd must be guarded with thick Compresses, to prevent their being pain'd. The two Servants being conveniently seated, the one above the other, the upper one has the Patient's Head and Shoulders resting upon his Knees, and against his Breast, and pulls with his two Hands the two ends of the Noose, one on the inside, and the other on the outside : And the other Servant, who sits below, pulls the two ends of his Noose with yet more force than the other, because the Peg does great Service in pushing the Bone from the inside outwards, in order to make it re-enter its Cavity. These two Servants must take care to pull both in a strait Line. If it be the right thigh, the Surgeon forcibly pushes from the outside inwards with his left Hand, being assisted by the Peg, which is much more effectual than the Surgeon's Hand ; then with his right hand he grasps the Knee below the Noose, and

and pushes from the outside inwards. Then he bends the Knee, laying the Leg across towards the other as much as he can.

This is undoubtedly the best Invention for reducing an internal Luxation that's recent ; but if the Luxation be of long standing, we must have recourse to Machines, several of which may be readily made out of hand.

The most commodious of 'em all is the Mill made of two Pieces of Wood, with three Holes in each. In the Holes of the two ends we put a Peg to keep the Boards together ; and in the middle Holes we put a stick about half an Ell long, at the end of which are two little Holes for receiving two Pegs of a moderate bulk, and a Foot long, in the form of a Cross. This Machine being held firm against a Wall, a Servant takes hold of one of the Pegs, and by this means the Noose twists it self round the Stick, and so the Extension is as strong as can be desir'd. In this Method the Servants are plac'd as above, and all other Circumstances the same.

The Nooses pull'd by the Mill must be pull'd downwards in a strait Line, and the Surgeon acts the same part as when no Mill is made use of.

This Invention of the Mill I recommend to the *Country Surgeons*, that can't come at the other Machines us'd in great Cities ; for in a difficult Luxation all our Design is, to make a strong

strong and great Extension, which this does very effectually, and very easily.

The Bandage proper for this Case is already describ'd, in treating of the Fractures of the Thigh-bone, and shall be further view'd after I have shewn the *Signs* and the *Reduction* of the remaining three Luxations of the *Thigb-bone*.

The *Signs* of the external Luxation are very different from those of the internal ; for in the external the affected Leg is always shorter than the sound one, by reason the head of the Bone is then above the Cavity ; besides that, the extending Muscles draw towards their Head, and so pull the Bone upward. The Knee and Foot turn in this case inward towards the other Leg ; and the Heel, which turns outwards, is so affected, that the Patient cannot stand upon it, and so can only rest on the ball of his Foot. If this Luxation can't be reduc'd, in process of time it beats out to it self a false Cavity behind the *Iscbium* ; for the Flesh being frequently and forcibly grated and bruis'd by the Head of the Bone, it becomes callous, and serves for a Cavity to the Bone ; and in that case the Patient may walk without a Cane, because the Body bears upon a direct Line, which can't be when the head of the Bone is lodg'd in the internal Part.

The external Luxation of the *Thigh-bone* is the easiest reduc'd of 'em all. We lay the Patient upon his Belly, without any such Peg as was order'd for the internal Luxation, and ap-

ply two Nooses, in a different way from those us'd in the internal; for the Noose that's above the Knee is applied to the internal, lateral, and inferior Part of the Thigh, and pull'd upward from the inside to the outside, by a strong Extension: The Servant that pulls it sits uppermost, with the Patient's Face on his Lap, and draws the Strings upwards.

The second Noose is applied to the upper internal part of the Thigh: One of its Heads passes inwards under the Armpit, and the other outwards over the Back, along by the Neck; and the Patient's Arm is extended in a streight line downwards, and ty'd by the Wrist to the Servant's Girdle, the Hand resting upon his Breech. Two Servants are to pull this, one upwards, and the other downwards.

If the right Thigh is dislocated, the Surgeon plants himself on the left side, and with the Palms of his Hands pushes the Bone from the outside inward, in conjunction with the lowermost Servant, who pulls his Noose with all his force from the inside outwards, endeavouring to make the Knee turn in towards the other Leg, by pulling the Heel outwards.

If these Means are not sufficient, you must have recourse to Machines.

C H A P. XXXI.

Of the Anterior Luxation of the Thigh-bone.

WE know that the Head of the Thigh-bone is slipt out on the fore-side, when we find the head of the Bone resting upon the *Os Pubis*, and a great Tumor in the Groin, the Breech wrinkle'd and thin, by reason of the contraction of the Muscles; when the Patient extends his Leg without Pain, but can't bend it towards the Groin, because the Anterior Muscle is squeez'd by the head of the Bone, so that it can't extend it self; when the Patient can't bend his Ham without great Pain; when upon comparing that Leg with the other, we find 'em equal in length, and the Patient can't support himself but upon his Heel. When this Luxation happens, we must reduce it betimes, because it causes a Suppression of Urine, for that the Parts which convey the Urine to the Bladder are violently press'd and squeez'd by the head of the Bone, and thereupon a great Inflammation ensues.

To accomplish the Reduction, place the Patient on the sound side, and perform the same Extension as in the internal Luxation. The Extension must be directed from without inwards, and suitable Endeavours must be us'd to make the Head of the Bone return the way it came. To this end apply a hard and round

Com-

rests on the Head of the Bone, and press Impress down with your Knee ; then the Patient's Knee towards the other Leg, observing the above-mention'd Extent you'll compleat the Reduction.

C H A P. XXXII.

The Luxation of the Thigh-bone in the Hinder Part.

The Posterior Luxation of the *Thigh-bone* happens but seldom, by reason the Cavity *Ischium* is very deep on that side, where the inner side 'tis shallower and notch'd, makes the internal Luxations more frequent than the other.

: Signs of the Posterior Luxations are The Patient can neither extend nor bend his Legs, by reason the Muscles that en-compass the head of the Bone are extreamly contracted and extended ; the Pain increases violent when he offers to bend the Ham ; the hind Leg is much shorter than the sound one in feeling or pressing the Breech, the Head of the Bone is felt to make an Eminence through the Muscles ; a great softness in the cavity of the Groin is obvious to the Touch ; the Patient can't touch the Ground, by reason the Head of the Bone lies hid between the Muscles of the Breech, which draw it upwards, especially the great Muscle, which undergoes a

greater pressure than any of the rest ; (for the same reason the Patient can't bend the Knee, for in bending it he must make a great extension of the upper *Aponeurosis* of the *Tibia* ;) if the Patient strives to stand upon the Foot of the dislocated Limb, without something to support him, he falls backwards, because the Body is not plac'd in a perpendicular line over the Bone, so that in this case he must have a Crutch under the Armpit of the affected side.

Such are the Signs of this Luxation. To reduce it, you must place the Patient upon a Bank, or a Table cover'd with a Quilt or some other thing.

In the next place you must remember, that the Part where the Bone rests must needs be more prominent than that from whence it dropt. 'Tis likewise to be remember'd, that if the Patient be a Child or a Woman, we ought not to make violent Extensions with Nooses and Machines, for that the Hands of the Surgeon for the most part will suffice : I say, *for the most part*, for I do not deny but that sometimes Luxations happen both in Children and Women, which can't be reduc'd without Nooses.

In reducing this sort of Luxation the Extension must be more violent than in the other. You must push the head of the Thigh-bone with the great *Trochanter* from above downwards in a streight line, and with great force pull the posterior part of the Thigh backward ; by which means the head of the Bone will

It re-descend the same way it came, and so
into its Cavity.

*Reflections upon the Luxations of the Shoulder
and the Thigh.*

Dare to say, without reflecting on any Practitioner, that of all the Writers upon the *Dislocation of the Thigh-bone*, not one has taken notice of that excellent Precept of *Hippocrates*, quoted above, importing, that in all Luxations three things are to be consider'd, viz. whence the Bone went, which way it went, and where it stops. This *Galen* advises us to mind with attention, that we may avoid the Mistake of some Surgeons in his Time, at not only miss'd of the Reduction of the bones, but turn'd one Luxation into two. This, says *Galen*, proceeded from their Ignorance, in not being acquainted either with the Cavity of the Bone, or its Head, or the way it took in removing from its proper station, or the place where it met with a Stay. He adds, that thro' this Ignorance, instead of raising the head of the Shoulder-bone upwards, when it was fallen below the Cavity under the Arm, they violently push'd the Arm from behind forwards, and so dislocated it a second time in the fore-part.

I know very well, that whoever is but slenderly vers'd in *Osteology*, will avoid such gross Miscarriages; but at the same time I think it

highly proper to advise 'em always to have in view this Precept of the great Master of our Profession, when they are employ'd upon the two famous Luxations of the Shoulder and the Thigh-bone.

The true way of learning to reduce these Dislocations successfully, is to do it frequently upon a Skeleton.

To apply this great Precept of *Hippocrate* to the Reduction of the Thigh-bone, which lies now before us. This Bone, as I intimated above, may be dislocated four Ways. Is an internal Luxation, the Head of the Bone departs from the Cavity of the *Ischium*, it takes its Passage over the hollow Notch, and stops upon the Hole of the Share-bone, the Neck of the Bone resting on the Notch, and the *Trchanter* possessing the Cavity of the *Ischium*.

Now these Things being duly minded, 'twill be an easie matter to set the Bone, by making it return the same way it past, in pushing the Bone from before backwards, and making it repass by the same Notch. In doing this, we must call to mind what *Hippocrates* says, That the Neck of the Bone rests upon the Notch, and to facilitate the re-entrance of the Bone into its Cavity, it behoves us to push the inferiour Part of the Thigh from the outside to the inside, by laying the Leg across upon the other Leg; for as the lower end of the Thigh advances forwards, it throws the Head of the Bone behind or backwards.

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The external Luxation is different from the internal, upon the Account that there the end of the Bone sallies out in another Course. It gets behind the *Cotyle* or Cavity, and rests on the Sinuosity of the *Ischium*, between the berosity and the verge of its Lip. Now, e it must be remark'd, that the hinder side the Cavity is lower than the other.

In reducing this Luxation, we take Mea- es contrary to those last mention'd : Being oriz'd that the Head of the Bone departed in its Cavity, steering from the inside out- rds by a transverse Line, pointing directly the Notch of the inner part.

In this Luxation the Patient is plac'd upon Belly, as I intimated above ; after which Servants do their Office, and the Surgeon erts all his Force in pushing the Bone with two Hands or his Knee. He pushes it from outside inwards in a transverse Line, mag the lower part of the Thigh approach m the inside outwards.

The Dislocation in the anterior or forepart more uncommon than the former two, by son that the Cavity of the *Ischium* has high- Sides before, than either on the inside or side. When this Luxation happens, the end of the Bone slips out of its Cavity thro' nall Notch in the upper part of the Cavity, l steers in a transverse Line over the upper t of the Share-bone, just by the Union of two Bones.

To make it return the same way as it went out, we push it from before backwards in a transverse Line, pulling the Nooses both above and below, from the inside outwards. The Patient is laid on his sound Side, as I said before, and the lower part of the Thigh is pull'd with the Knee from the outside to the inside: By which means the Head of the Bone comes to re-enter its Cavity.

The posterior Luxation of the Thigh-bone being more uncommon than any of the rest, I shall add to what I have said before, that I do not meet with any Author that has well explain'd in what Luxation of the Thigh-bone the round Ligament is broken, and in what Luxations it continues to extend it self.

It must be own'd, that this Ligament is very short, as not being above an Inch long so that it can't remain entire in any Luxation besides the internal, where the side of the Cavity is a little rais'd. If it subsists entire in this, it must stretch it self to two large Inches; but in the posterior Luxation it must stretch above six, and in the anterior above three. From whence we conclude, that the round Ligament which fastens the Head of the Thigh-bone in its Cavity, can remain entire only in the internal Luxation.

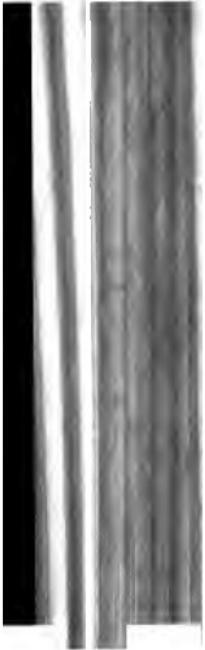
The Luxation of the Thigh-bone requires the same Bandage as was describ'd for the Frature of the upper part. The Groin must be defended with four triangular Compresses, one

z of which runs downwards along the
igh. A great Compress three quarters of
ll long, and three Inches broad, should
ad along the inside of the Thigh, and
e to cross upon the Articulation. This
, we apply a Roller with two Heads, be-
ing from the inside outwards; then cross
upon the Joint, conduct one of the Heads
e inside, and the other to the outside;
which, we return from behind forwards,
crossing again upon the same part, form
l Edgings from above downwards. This
, we repass by the inside of the Thigh,
so return to steer from the inside outwards,
ing the small Edging so as to form a *Spica*.
aving made three *Spica*'s and a half, we
then make a *Geranium* or Crane, which
othing else but a small Aperture left un-
the *Spica*'s, by making two circular Rounds
it the Neck of the Thigh-bone. This
ture resembles a Crane, and so gave rise
ie Name. We finish the Bandage in co-
ng the *Spica*'s, and making circular Con-
ions round the Body.

CHAP. XXXIII.

Of the Fracture of the Rotula.

HE *Rotula* undergoes Fractures several
Ways, viz. lengthways, crossways, or into
ral Pieces, either with or without a Wound.



can't extend his Leg, because
ding Muscles of the Leg are ki
in by an *Aponeurosis*; and at i
he can't bend it without a grea

To reduce it, make the Pa
and take the Knee in your two
the inside and the other on the o
your Thumbs meet, and with y
fingers and your Thumbs pull
gradually till the two Ridges
another; then make the great
Cbiaste, in the following manne

Take a single picce of Linne
ten Fingers-breadth long, and si
it in the Whites of Eggs, with
then lay on a Compress of four
ving an Aperture to receive the
a Comprels and Pastboard sew'd

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not remov'd till the Cure is accomplish'd. You begin the Application above the *Rotula*, and then make a Cross under the Ham ; on returning from behind forwards, you pass low the *Rotula*, and thus continue to conduct ur two Hands or Balls, crossing on every e, both within and without, under the Knee, that you leave the *Rotula* uncover'd. The
ier two Fillets are roll'd and apply'd in the
y same manner with the first. In the mean
e, to avoid tangling, you must always re-
ember to conduct one Head along, before
u cross the other.

You finish the Bandage with the fourth Fil-
roll'd up in one Ball, of the same length
d breadth with the former three ; beginning
Application under the Sole of the Foot,
wing about five or six Inches of one end to
made fast, in rolling upwards with great
lgings and renvers'd Turns. When you
me at the Ham, under the *Rotula*, you stay
ur Filler, and above the last Turn apply a
ftboard cover'd with a thick Compreis, at
st twelve Fingers-breadth long, and eight
oad. This you lay under the Ham, and
ep it on by the same Roller, which is then
mount upwards with Edgings or *Doloires*
the Groin.

At last you conclude the whole Dressing
th the Junks, describ'd above for the Thigh.
this means the Patient may be cur'd in
irty or forty Days.

I do not know how it comes that *Pareus*, one of the greatest Practitioners of his Time, should affirm, that all those who have had the *Rotula* fractur'd are lame ever after, notwithstanding all the Precautions that can be taken.

For my own part, I do assure you, I have cur'd 3 or 4 cross Fractures of the *Rotula* without any such Consequence ; and have seen several such Cures perform'd by my Brethren.

If the Fracture of the *Rotula* runs lengthways, you must make the Uniting Bandage, describ'd in the beginning of this Treatise.

CHAP. XXXIV.

Of the Luxation of the Rotula.

THE *Rotula* may be dislocated upwards, downwards, inwards and outwards. To reduce it, you must hold the Patient upright, ordering some robust Person to embrace him under the Armpits. Then the Surgeon pushes the *Rotula* with the Palms of his two Hands, from above downwards, if the Dislocation bore upwards ; or from below upwards, if it bore down. If the Dislocation bore to the inside, he plants his Hands on the two Sides, and pushes to the outside ; and if it bore to the outside, he pushes the contrary way. The proper Bandage is the *Tortoise*, so call'd from its representing the Figure of that Animal.

'Tis made with a Filler four Ells long, and

breadth of two Fingers, roll'd up in l, the same Compreses with the Aper-
ng apply'd as above, without Pastboard.
e Roller you make two or three Turns
he *Rotula*, then two circular *Convoluti-*
w it ; after that, you run it along the
of the *Rotula*, making an Edging from
downwards ; then you descend under
ula, and there make an Edging from
ipwards. Thus you continue the Ed-
om above downwards, and from be-
ards, till the *Rotula* is cover'd all over.
ne, you lay a Pastboard guarded with
res under the Arm ; and so the *Rotula*
t in thirty Days.

C H A P. XXXV.

Of the Ankylosis.

the Diseases of the Joints are related
ose of the Bones, of which they seem
Species, I shall here oblige the young
is so far as to explain an *Ankylosis*,
; a Disorder of the Joints, being no-
le but a viscous and glutinous Moi-
at insinuates its self into the Cavity
rticulations of the Bones, and some-
rows as hard as the Bones them-

A very remarkable Observation upon the Anchylosis.

SOME Years ago, during my Attendance at the Hospital de la Charite des Femmes, I met with a young Girl ten or twelve Years old, that had an *Anchylosis* in the Joint of the Knee, occasion'd by a Wound in the internal lateral Part, between the *Condylus* of the *Tibia* and the *Rotula*. The *Anchylosis* was then of seven or eight Months standing, and her Heel was up to her Breech.

M. Houiller my Colleague, thinking there was no hopes of Cure, propos'd only to lay the Plaster *de Mucilaginibus* upon it, without troubling our selves further in vain. At the end of the Month, upon which the time of our joint Attendance was up, I attempted by my self to redress this grievous Disorder, which all the ablest Surgeons and Practitioners at Paris took to be incurable.

I begun at first with Emollient and Discussing Remedies; after these I apply'd such Discussives as were more penetrating and attenuating, and that for five Months, during which time I dress'd it twice a Day. After fomenting it for a quarter of an Hour with an Emollient Decoction as hot as she could endure it, I bath'd for a considerable space of time with a Discussive as hot as she could possibly bear it.

But

But that which in my Opinion forwarded the Cure most, was the Bandage with the Junks, that they make use of in a Fracture of the Leg. I began to apply these when the Leg was a little extended; for after fomenting the Knee with the Liquors, I took the Leg and the Thigh in my two Hands, and carry'd the Flexion and Extension as the Girl's Strength would allow.

When I made the Bandage, I took a very thin Splent, about an Inch broad, and eight or ten Inches high, and folded it up in a Compress of eight Doubles. I plac'd the middle of this Compress under the Ham, so that it bore with the two ends upon the Thigh and the Leg; and in regard the Leg was still bended, there was a great void space between the Compress and the Ham. Above the Knee I laid another Compress of seven or eight Doubles, strengthen'd with a pretty thick Pastboard. I made my Bandage with a Fillet five Ells long, and two Inches broad. With this I made five or six Rounds about the Ham, over the Compresses, and then two or three Rounds above, and as many below it; at last I stay'd my Bandage in two or three circular *Convolutions* above the Knee.

You must remark by the way, that as I advanc'd in melting the *Ankylosis* with my Emollient and Disculsive Remedies, I still made my Bandage tighter and tighter.

'Tis likewise to be remark'd, that every Day

Day, Morning and Evening, I made the Flexion and Extension of the Leg with a violent Force: And during all these great Motions I heard a Noise, which proceeded from the Agitation of the *Condylus's* of the Tibia and the Thigh-bone, while the *Anchylesis* was melting. All this could never pass without a great deal of Pain, and I lay under a great Necessity of looking narrowly after the Strength of this little Girl; for oftentimes after the Torture of my Operation was over, I was oblig'd to leave her in Repose for seven or eight Days: But as soon as she recruited, I renew'd the Flexion and Extension, in order to melt down and dissolve the *Anchylesis*. In fine, by this means the Girl was perfectly cur'd, and now walks without the least Lame-ness. I begun in *September*, and finish'd the Cure by the end of *January*.

C H A P. XXXVI.

Of the Fracture of the Leg, both Compleat and Incompleat.

WE call a Fracture of the Leg *Compleat* when the two Bones of the Leg are broken quite thro'; and *Incompleat*, when only one of 'em is broken: But at the same time a Fracture may be either *Compleat* or *Incompleat* upon a Part that has only one Bone, as the Shoulder or upper Arm, and the Thigh;

in which case we call it *Incompleat*, when only a Part or Splinter of the Bone is forc'd asunder from the rest; and the whole Body is not disunited.

We know that only the *Tibia* is fractur'd, when the Bone bears to the inside of the Leg, and is not crooked; for the *Perone* or *Fibula* hinders it from flying outwards. But the Fracture of the *Perone* is commonly more hard to distinguish, because this Bone is less, and makes a less cracking noise; besides that, 'tis cover'd with more Muscles than the *Tibia*.

When both the Bones are broken, they turn equally to the inside and outside, the foreside and backside. Both the Bones fractur'd, are harder to cure than only one, as I intimated above in the Fracture of the Cubit; for while one Bone stands, it serves for a Splint and Support to the other.

To reduce the Fracture of the two Bones, when they do not lie one upon t'other, you must make no great Extension, but be careful of what you're to do before and after the Operation, as well as in the interim.

Before you dress the Patient, you must have all your Dressings and Apparel ready, and two Servants qualified for making the Extension and Counter-Extension, call'd by the Greeks *Antistasis*; the Conformation call'd by the Greeks *Diaplasis* being the Surgeon's Province.

I have

I have already shewn how an Extension must be made equal and unequal with the other Parts. When the two Bones are fractur'd, and the Ends are at no great distance from one-another, you need make no other Extension but with the Hands of two Servants, one of whom claps his left Hand under the Heel, and with his right Hand full spread grasps the Foot, his Thumb being under the Sole of the Foot, and his four Fingers upon the upper part of the *Tarsus*, while the other Servant grasps the upper part of the Leg with his two Hands, one on the inside, and t'other on the outside, so plac'd that the two Thumbs are upon a level, pursuant to *Hippocrates's* Precepts.

The two Servants in this posture are to pull equally in a streight line, and care must be taken that the Leg is neither too high nor too low. This done, the Surgeon makes the Conformation with the Palms of his two Hands, taking hold of the Leg on each side, and bearing it up from below upwards with the *Tibenar* Muscles that lie under his Thumbs; then holding the *Gemelli* Muscles under the Leg with his eight Fingers, passes his Thumbs over the Crest of the *Tibia*, to see if the Bone is even.

The Leg being held in this posture, both by the Servants and the Surgeon, without budging or giving way, another Servant comes and applys a piece of Linen Cloth about 12 Fingers-breadth long, and 4 or 5 broad, having first dipt it in Oxycrate, and cover'd it with a

Defensive of the *Whites of Eggs* and *Oyl of Rances*. This piece of Cloth is cut at both ends, almost two inches in length.

If the Fracture flies to the inside, 'tis apply'd from the outside to the inside, the Ends that are thus cut being laid one over another : Then the Surgeon takes a Fillet two Ells and a half long, and of the breadth of three Fingers ; and if it be the left Leg, with either the *Tibia* or both the Bones cast to the inside, he places himself on the outside, and holds the Ball of the Roller in his right Hand, resting his Thumb upon the middle of it, while the end of the Roller is held by the left Hand, with the Thumb likewise resting on the middle of it ; this done, he unrolls the Roller as far as the breadth of ten Fingers, and pulling it over the Thumb and Wrist, rests the Ball against his left Hand, and does not set the Roller a-going till this End is apply'd to the Part.

I have already told you, that all the Security of a Roller depends on the first turns, and if these slack, all the rest will prove the same.

The end of the first Roller being thus apply'd for a little way upon the solid part of the Bone, if the Fracture runs all round, or to the middle of the Fracture if it runs obliquely, we give three pretty tight rounds about the Fracture, taking care to make these three equally tight, according to *Hippocrates's Rules*, to unrol the Roller as far as what will go half round the Part affected, and to hold the Roller

in the left Hand, in a streight line, without moving : This done, the right Hand takes hold of it, and does not set agoing till the left Hand has grasp'd the lower part of the Leg ; after which the Surgeon continues to make the same turns, ascending to the Ham, and forming small Edgings, or renvers'd Turns, where there's occasion.

The second Under-Fillet must be as broad as the last, and three Ells long, and applied from the outside to the inside : With this you make two Convolutions upon the Rounds of the former, and then descend under the Sole of the Foot, leaving the Ankle-bones as open as you can : This done, you re-ascend with it, with Edgings a little larger than those of the first and renvers'd turns, if there's occasion. At last it terminates along with the first.

After this you apply a transverse Compress, made of a piece of Linen about a quarter of an Ell long, and as broad as sixteen Fingers. This Compress you're to fold lengthways, leaving about an Inch from the Edge uncover'd ; then you fold it again once or twice, and reduce it to the breadth of five Fingers, to be soak'd in *Oxycrate*, and cover'd with a Defensive or some other Liquor, if there's occasion. The Plaits of the Compress must be applied below, as near the Ankles as you can, and the ends of the Compress should lie upon another, not upon the Crest of the Bone, but upon the outside or the inside of the Leg.

The

The Longitudinal Compresses must be twelve Fingers-breadth long, and two Inches broad : Of these you're to apply four, *viz.* two forwards, one on each side, at the distance of a Fingers-breadth from the Crest of the Bone, which ought to be left open ; and two on the Sides, taking care to make 'em fit tight.

This done, you come to apply the third Fillet quite contrary to the other two, that is, from the inside to the outside. You roll this upon the same Turns with the first, beginning with the single Round, and so ascending in Edgings with greater Intervals, till you come to terminate along with the others.

The fourth Fillet is applied first above, then it descends from the out to the inside in greater circuits than the third.

This done, you apply Pastboards to the lateral Parts of the Leg, leaving the ridge of the Shin uncover'd for about a Fingers-breadth : These Pastboards are to be held on with three Strings about an Ell long and an Inch broad. The middle String must be first ty'd, for which you hold the end of it in your left Hand, on the outside of the Leg, and with the right you hold the other end under the Leg, in order to make a circular Convolution about the first Turn. The same course is taken in tying the other two ; and withal you must remember that all the three Knots must lie on the external lateral Parts.

Having already shewn you how to make the Junks, I shall now only add, that the outside Junk should be two inches longer than that for the inside, by reason that the lower Part of the *Perone* is somewhat longer than the *Malleolus* of the *Tibia*; but at the same time both the Junks must extend their upper and lower part beyond the Knees and Feet. I mean, that both the Junks must go equally beyond the Knees the breadth of three Fingers; but the inside Junk shall reach beyond the Feet only one Inch, whereas the outside one ought to reach three Inches beyond 'em.

Here you must call to mind what I said relating to the making of Junks, namely, that the Chaff whereof they are made ought to be fortified with little Rods. Before you apply 'em, you must lay under 'em three small Ribbons, at the distance of four or five Fingers-breadth from one-another, and guard the lateral Parts, from the Ham to the Ankle, with two good entire Compresses, or else several little ones; after which you are to lay over the Leg, from the Knee to the beginning of the Foot, another thick Compress of eight doubles. The Junks laid under the Leg must be ty'd on with three Strings, beginning with the middle one, which ought to bind faster than all the rest; and all the Knots must be cast on the outside of the Leg.

I advise you to make use of a Sole as much as you can in all Fractures of the Thigh, the
Leg.

Leg, and the *Rotula*. The Sole should be of Pasteboard, if you can have it, or at a distance from great Towns, where that can't be had, of some old Sole of a Shooe.

If you are forc'd to make use of Wood for this Service, let it be very thin, and guarded with a good Linen Compress, to hinder its hurting the Sole of the Foot. At the end of the Sole you must put a Ribbon about three quarters long, to be ty'd to the first upper String that ties on the Junks.

This Ribbon is of great use, it keeps the Sole in good order, and serves as a Stay-and Security to the Leg, for nothing hinders the Union of the Bones more than Motion. If all these Circumstances be duly observ'd, the Leg will lie very soft and easie, and in such a manner, that the Foot is somewhat higher than the Knee.

The first day of the Dressing you must make a Rope to hang down from the top of the Bed, within reach of the Patient's Arm, and fasten to the end of it a Peg or Knob cover'd with Linen, that the Patient may not hurt himself when he goes to stool. At the same time, for the greater security of the Leg, you must arch up the Bed-cloaths with a Hoop, or some such thing, for the motion of the Cloaths might hinder the re-union of the Bones.

Here I refer the Reader to what I have already said upon the *Fracture of the Thigh*, of the Signs whereby we know whether the Bandage

dage is too tight or too slack; and can't but caution my Reader once more to be very careful upon that Head.

The greatest and most important Advice I can give a *Young Surgeon*, is, to visit his Patient frequently, because the whole Dressing may slacken in a little time. On occasion here's no Danger in untying the little Ribbons of the Junks, and opening these a little, in order to make a tighter constriction of the three Strings of the Pastboards, for this may be done without moving the Leg.

For the second Dressing, two Servants must hold the Leg, one the upper part, and t'other the lower, without pulling or drawing any manner of way, while the Surgeon neatly undoes the Rollers with one Hand, and with the other takes hold of the Leg very gently, and so takes off the whole Dressing.

But if he finds that the Leg is very streight, and of the right shape, he ought not to touch it at all. If the Part is disturb'd with an Itching, let him dip a Rag in Water and Salt heated, and let it drop upon the Leg beyond the Fracture. If no Accident forbids, he may apply upon the Fracture the Plaister against the *Rupture*, perforated with little holes in rows, to give way to the penetration of the Wine heated, in which all the Rollers and Compresses are to be steep'd. The rest of the Dressing is the same with the first..

Eight or ten days after, he is to dress it a third time, without any alteration. After the 24th or 25th day is past, he must take off the Dressings every three days, and foment the Leg with the hot Wine in which the Compresses are dipt, and lay on the Plaister again, leaving off the Roller.

After that he must not bind the Part so hard; and for the last eight or ten Days he is to apply only two Rollers, continuing still the Junks. About the fourtieth Day he may take off all the Dressings, and clap the Leg into some deep Vessel fill'd with Red Wine, boil'd with Aromatick Herbs. This Wine must be heated very hot in Winter, and moderately hot in Summer. The Leg being thus fomented two or three times a Day, the Patient must use a Stick for the first Days of his beginning to walk; for at first he does not dare to throw his Weight upon the broken Leg, and it seems to be shorter than the other, by reason that he does not dare to extend it to the full length. Some time after, you must make him quit his Stick, that so he may discard the Fear of being unable to walk without it. So much for the Compleat and Incompleat Fracture of the Leg.

Here I have taken no notice of the Rolls made for the Seat, which, after all, are very useful in a Compleat Fracture of the Leg, or even a Fracture of the Tibia.

C H A P. XXXVII.

Of the Luxation of the Tibia when its upper Part departs from the Thigh-bone; the Bandages requisite on that occasion.

THE Tibia may be dislocated from the Thigh-bone four Ways, viz. inwards, outwards, upwards and downwards. The Signs by which we distinguish these Luxations, appear in the figure or form of the Leg. If the Condylus flies inward, the Leg turns outward ; if the Joint bears outward, the Leg turns inward ; and when the two Condylus's descend under the Ham, the Heel approaches to the Breech. The upward Luxation is very rare, tho' still possible.

C H A P. XXXVIII.

Of the Dislocation of the Tibia to the outside.

IF the Dislocation is external, cause the Patient to sit down on a Chair without Elbows, and order a Servant to embrace him, and hold him fast ; while you clap your right Hand upon the inside of the Thigh, and your left Hand on the inside of the Leg, and so with your right Knee push the Eminence of the Bone from the outside to the inside, till his right set.

CHAP.

C H A P. XXXIX.

Of the Dislocation of the Tibia to the inside.

IF the Bone flies off to the inside, the Surgeon places himself between the Patient's two Legs, and takes hold of the outside of the Thigh and Leg, and pulling inwards with all his Force, pushes the Eminence of the Bone from the inside outwards with which of the Knees he can most conveniently apply.

C H A P. XL.

Of the Posterior Luxation of the Tibia.

IF the Tibia is dislocated to the Back, or hinder Parts, let the Patient be set upon a Chair or a Bed, and held fast by a Servant behind him, while another Servant takes a wooden Peg, cover'd with Linnen, about twelve Fingers-breadth long, and lays the middle exactly under the Ham, so that its two Ends may be pull'd from below upwards by a Servant. The Surgeon places himself on one side of the Leg, and after applying a piece of List, or some other Fillet under the Knce, pulls with his left Hand the two Ends of the Fillet upwards, and with his other Hand bends the Leg, making the Heel approach to the Buttocks.

CH¹

C H A P. XLI.

Of the Luxation of the Tibia forward.

IF the *Tibia* is dislocated towards the fore-part, you must lay the Patient upon his Back, on a Plank, with a Quilt or some other Covering under him, and a Servant behind him that holds him fast. Then comes another Servant, who with his two Hands pulls the lower Part of the Thigh-bone upwards; while a third Servant draws the Leg downwards, and the Surgeon with his Knee pushes the Eminence of the Bone from above downwards, so as to make it re-enter its Cavity.

The Bandage is made with a Roller with one or two Heads, and a Compress cut hollow, soak'd in *Oxycrate*, and cover'd with a Defensive of the *Whites of Eggs*, and *Oyl of Rises*.

If the *Tibia* is dislocated to the inside, apply the end of the Roller from the outside inwards, and make two circular Rounds above the *Rotula*; then descend under the Ham, and make two circular *Convolutions* under the *Rotula*: This done, cross upon the internal lateral Part of the Ham, moving from the outside inwards; then re-ascend over the first Turns from the inside outwards, and from the outside inwards; after that descend below the Ham from the inside outward, continuing your Edging from the upper Part

down

wnwards, and *& contra*. At last compleat Bandage in a circular Round or two above *Rotula*. This Fillet or Roller should be ee Ells long, and three Fingers broad.

As for the Anterior or Posterior Luxation, u must make the Bandage with a Roller ne up to two Heads. In the Anterior you gin the Bandage upon the upper and forert of the *Tibia*, making two circular Rounds out the lower Part of the Thigh-bone, just the *Rotula*; then descend under the Ham, ssing both on the inside and the outside.

Here you must call to mind what I re-
rk'd before, that in making the *Chiastes*
(rosses) upon the lateral Parts of the Knee;
e Head must cross and pass first, whether
the inside or outside. For Example, in
lding the two *Balls* or Heads with your
o Hands, you must pull one Head from
outside towards the inside, and cross un-
r the Ham; after which you must pull the
ier Head from the inside, outwards, and
ss likewise on the outside; then pass over
e other Head, continuing your *Edgings*,
it is, so as to make the lower Ball edge
m below upwards, and the upper Ball edge
m above downwards.

You must take care to make a very slight
richture in covering the *Rotula*, to make all
e Crosses on the two Sides of the Ham, and
form the *Edgings* on the fore-part both of
Thigh-bone and the Tibia.

C H A P. XLII.

Of the Dislocation of the Joint of the Astragalus with the Tibia.

After dispatching the upper Dislocations of the *Tibia*, we come next to its Luxation at the lower end.

The *Astragalus* is dislocated to the inside by an incompleat Luxation; and then it moves half out of its Cavity, and the internal *Malleolus* possesses the upper Cavity of the *Astragalus*; the Heel turns very much outwards, and the Sole of the Foot turns the same way.

Besides these Circumstances, there's a great Rising in the internal lateral Part of the Foot, which is the *Astragalus*.

If the *Astragalus* is dislocated to the inside, there's an Eminence in like manner on the outside, by reason that the Process of the *Perone* retires backwards.

C H A P. XLIII.

Of the Compleat Dislocation of the Astragalus.

ACompleat Luxation of the *Astragalus* can't come to pass without great Violence. For my own Share, I never saw any

of

this Nature, but incompleat Dislocations have met with in my Practice.

If the Dislocation is Compleat, the *Astragalus* must depart altogether from the Cavity of the *Tibia*, and the internal *Malleolus* must stand in the room of the Head of the *Perone*, and the Process of the *Perone* must incline to the outside, under the Sole of the foot. Indeed, I doubt much if any such luxation can happen. If it does, of necessity the *Tibia* must move to the distance of four fingers breadth from its Cavity, and the Ligaments that knit the *Perone* to the *Astragalus* must be strangely relaxated ; nay, I doubt much if some of the Ligaments must not be quite broken.

For a due Reduction of all these Dislocations, let the Patient sit down upon a Chair without Elbows, or upon the side of a Bed, if he can't sit in the Chair. Let a Servant behind him hold him fast by the middle of the body, while two other Servants pull the Leg pwards with all their Force, the one holding it by the upper with his two Hands, and the other by the lower Part, near the Ankles. Then, if the Dislocation throws to the inside, the Surgeon must take hold of the Foot with his two Hands, and pull the Sole of the foot from the inside outwards : If the Dislocation bend outwards, he makes the Servants take the same Extension, and the Surgeon pushes the Foot to the inside.

The Bandage is made of a Roller three Ells long, and two Inches broad, with a Compress of the breadth of two Fingers, and sixteen Fingers breadth long, dipp'd in Oxy-crater hot, and smear'd with a Defensiv. This Compress is apply'd all round upon the juncture of the *Malleoli*. If the Dislocation is internal, apply the end of the Roller on the outside, and make two Turns; then run it from the inside outwards upon the fore-part of the Foot, and upon the Articulations of the *Malleoli* under the Sole of the Foot; after that, from the inside outwards, cross above the Foot, and so run round the Heel from the inside outwards, under the Sole of the Foot.

This done, you must cross from the outside to the inside; then pass inwards round the Heel, and under the Sole of the Foot, from the inside outwards, and so over the Foot, forming a *Demi-Lozenge*. After these Turns, you descend lower under the Sole of the Foot, over-against the other *Convolution* of the Roller, in order to form a *Rhombus* upon the middle of the Foot. Then making two Turns with a little Descent, you form yet another *Rhombus*. This is what we commonly call the *Sandals*. Forty Days are requir'd for recovering the Strength and Use of this Articulation.

Thus

Thus I have gone through the Signs of Fractures and Luxations, and the way to reduce 'em by the Means of Bandages, so it remains only to shew what a complicated fracture is; for which end I shall treat particularly of the Fracture of the Leg, attended with a Wound, a Subject that Hippocrates very large upon in his third Commentary of Fractures.

C H A P. XLIV.

Of the Complicated Fracture of the Leg.

Hippocrates is of Opinion, that if a Fracture is accompany'd with a Wound that is not very considerable, if no Scales or Splinters be separated from the Bone, and if the Extension and Conformation are duly perform'd, the Fracture ought to be dress'd in the same manner as if no Wound had been; and a circular Bandage, such as we use for complicated fractures, will serve in the Case of such a complicated Fracture.

This small Wound ought to be dress'd as little as possibly we can, because the Suppuration must direct us whether to dress or to leave the Part in Repose, for as much as the whole Intention of the Surgeon ought to consist in keeping the Bones in the Posture to which they are reduc'd.

In former Times some would not use a Bandage for the Fracture till the Wound was consolidated, but *Hippocrates* absolutely disapproves those Sentiments, especially where two Bones are fractur'd with a Wound.

The same is the Opinion of *Galen*, who says, that if we neglect a Compleat Fracture in the beginning, and apply all our Care to the Flesh, we thereby occasion many Disorders, such as the Contraction of the Member, or a naughty deform'd *Callus*. To this purpose is the following Instance of a Complicated Fracture that fell into my hands some Years ago.

A Practical Observation.

A Man aged Sixty-eight Years had a great Fracture in his right Leg, which was broken and bruis'd into several Splinters, and the Flesh was torn so as to leave a Wound three Fingers over, above the inner Ankle. This Fracture was caus'd by a Cart-Wheel that threw him down upon his Face.

Now 'tis to be observ'd, that the Street was very steep, which was the cause of all the Mischief; for after the Wheel had run over the Man's Leg, the Carman not being able to stop the Cart by reason of the great Descent of the Street, the Wheel put back, and run over the Man's Leg a second Time. Upon which the Carman seeing what had happen'd, had a mind to get off as soon as he could, and

I rove his Cart over his Leg a third time. The wounded Man being brought immediately to me, I presently saw a great Wound in the lower part of his right Leg, with a profious Hemorrhagy; then taking the Leg in two Hands, and bending to the inside and outside, I perceiv'd that it bow'd on all sides, and had no other stay but the Flesh.

I mention this Instance as a proper Example for young Students, because 'twas the best Hurt that ever happen'd to a Man of Age; and during the eighteen Months I dress'd it, before I could bring it to a perfect Cure, there was a necessity of all the Art, Diligence and Caution that Art and Practice can injoin.

or the purpose, you must know, that before the Fracture happen'd this Man had an Ulcer with a *Caries* in the same Leg, above the inner Ankle, where the Bone was broken, that he had bore this Ulcer for forty Years. First of all I stopp'd the Blood with Lint and ingent Powders, two good transverse compresses, and two longitudinal Compresses, and after making five or six Turns of a Bandage upon the Fracture, carrying it up withings, I put two Props under the lateral parts of his Leg, in the form of Junks. Thus I dress'd him on a Ladder, with a Quilt under and a Covering over him, and so order'd to be carry'd Home, for he had desir'd to convey'd to his own Home; so that this

first Dressing was not so orderly as I would otherwise have made it.

When he got Home, he was carry'd up three Pair of Stairs, which did a great deal of Injury to his Leg ; and after he was laid upon his Bed, he was dress'd more exactly about Four a-Clock in the Afternoon ; and the b'leeding was so violent, that I was forc'd to dress him about the Midnight of that Day.

Mr. Presidy being likewise call'd, he and I tended him jointly, and found one half of the Leg, and all the upper part of the Foot gangren'd. Some were for Amputation ; but by my vigilant Care and Diligence I put a stop to the Gangrene.

You must remark, that during the Dressing of this Fracture there happen'd great Disorders ; for the Muscles which bend the Foot were quite putrify'd, so that we were oblig'd to make great Incisions : And about ten or twelve Days after, the *Tibia*, upon which the Fracture and *Caries* was about two Fingers breadth from the *Malleolus*, appear'd bare for the breadth of two Fingers, and as black as Ink.

Thereupon I try'd all the Remedies that are proper to procure an Exfoliation ; such as the *Oyl of Guaiacum*, *Oyl of Camphyr*, &c. At the same time I was under an Obligation of saving and defending the great Tendon that extends the Heel, for that lay expos'd for the breadth of two Fingers. In fine, I made Injecti-

jections twice a Day for four Months together ; a part of the *Tibia*, as long as the breadth of three Fingers, exfoliated ; and then the Leg was pierc'd so, that you might have seen thro' it ; further, the *Perone*, which bore all the weight and shock of the Wheel, that pass'd and repass'd over it several times, was not only broken in several Pieces, but was likewise much bruis'd, which occasion'd constant abscesses and Ulcers.

Six Months after, it appear'd bare for the length of three Fingers breadth, and finding it carious, I apply'd an actual Cautery to it several times. But after that, there ensu'd another grievous Disorder of a Gangreen'd Ulcer in the Heel, as long as the breadth of three Fingers. This happen'd about the eighth Month, and lasted two full Months ; notwithstanding I was oblig'd to lift the Leg twice a Day to dress this Ulcer, a firm *callus* grew upon it.

Which shews, that all the Rules of Art, & all that Practice could invent, were put into execution ; for I always kept his Leg in due Figure, and in a strait Line, with Junks & proper Bandages. He had a Sole under the Sole of his Foot for full eleven Months, & indeed all these grievous Disorders were cur'd without great Labour and Pains ; during the first six Months, while the great Corruption and Putrifaction lasted, I set every Day five or six Hours (including

Morning and Night) in preparing my Apparrel, and dressing my Patient.

And, what is yet to be observ'd in the Conclusion of this Relation, he had nothing apply'd to him but the Junks and the Bandages with eighteen Heads, with longitudinal Compresses; for half the Gemelli Muscles was putrify'd by the Gangrene; and there was no firm or hard thing that could serve me during the whole time of the Cure.

I reckon this great complicated Fracture may serve for a Model and general Rule, for all that I can say upon this Head: But, what was the happiest Circumstance of all, the Patient recover'd perfectly in the space of eighteen Months, and six Months after walk'd without a Cane at the Age of Seventy, or Seuenty-two Years. Nay, he liv'd nine or ten Years after.

CHAP. XLV.

Of the Bandage of Extirpation.

THE are three Ways of stopping Blood, namely, the Ligature of the Vessels, the Vitriol Button, and the Turnstile: The first two I wave, as retaining to Chirurgical Operations; so it remains only to explain the third, which is a late Invention,

tion, and a very proper Means for stopping Blood.

The way of using it is this. Apply a Compress that goes round, above the *Rotula*. Upon this Compress you must put a Ribbon call'd *Tirebotte*, which is half an Ell long, and an Inch broad. This Ribbon you make fast at the two Ends, leaving space for running thro' it a little Stick, about as big as one's Finger, and half a Foot long; after which you make as many Turns over the Compress as you have occasion for.

But before I shew you the Application of the Bandage, I shall quote to you the Precepts of *Hippocrates*. He does not content himself in shewing the Situation and Posture every one of us ought to observe in all our Operations, but likewise would have us to consider the Posture of the Patient, especially in the Case now before us, where Life is in danger. Accordingly he tells you, the Patient ought to be upon his Bed-side, if his Strength will permit.

The Party that is to have the Bandage apply'd to him, must be held by such Servants as know how to do in such an Operation. Care must be taken to keep the Part as high as is possible, by reason of the Bleeding. You must apply no Rollers or Fillets till all the Pledgets and Compresses are laid on, which ought then to be held on by the Hands of some

some of the Assistants, lest any should drop off in tying up the Part.

Hippocrates would have the Rollers and Compresses to be dipp'd in *Oxyerate* in the beginning, and towards the end in Wine. He adds, that when the Rollers are thus soak'd, they ply better to the Part, and the Bandage is better made, besides, that it helps to mitigate the Pain, moderate the Inflammation, and hinder the Flux of Humours. The same Divine Author orders the Surgeon to perform the Operation with both his Hands, that so it may be perform'd with more Sureness, Neatness and Diligence.

Galen would have the Member seated a little upon the Rise, and in a smooth, even, and painless Posture, especially when a *Hemorrhagy* is fear'd. After the Dressings are laid on, you must not take them off for two or three Days, unless some particular Symptom forces you to it. You must take care that the Bands or Fillets are neither too dry nor too apt to adhere; for which end you ought to have some warm Liquor to soften and moisten the Fillets and Compresses before you take 'em off, in order to avoid a *Hemorrhagy*.

Such are the Injunctions of *Hippocrates* and *Galen*, from which we may form a general Rule.

I don't

I don't pretend to spend Time in this place in shewing the Application of the severalsorts of Bandages recommended by Authors, and which are now scarcely in Use. In short, I would have the Application made in the following manner.

CHAP. XLVI.

Of the Application of the Medicines.

After stopping the Blood, either by the Ligature of the Vessels, or the Vitriol-Button, or the Turn-stile, let the Patient's Thigh be held a little high by a Servant, while another holds the Stump as high as he can ; then the Surgeon takes the Pledgits, cover'd with astringent Powders, such as fine *Bole*, *Incense*, *Mastich*, *Aloe*, calcin'd *Allum*, *Colophonio*, the *Hair of an Hare* cut very small, &c.

'Tis always most convenient for the Surgeon to lay on all the Dressings with his own Hands, and to have skilful Servants about him, one of whom is to hold the Basin with the Pledgits, cover'd with astringent Powders. The Surgeon takes these Pledgits in his right Hand, and applies 'em, and with his left Hand keeps 'em close up to the Vessels ; if his left Hand is not strong enough for that end,

end, he must employ his right Hand in the same service.

The astringent Powders should be diluted in Wine in which Roses, Pomegranate-flowers, and Sumach have been boil'd ; or if these Ingredients are not at hand, they should be diluted in Wine alone. After this, the Surgeon applies a Hog's Bladder well dry'd, and cut in the form of a *Malta Cross* : This done, he takes off the *Tourniquet*, which ought to have slacken'd after the Amputation, in order to throw out the Blood that's intercepted by the Ligature ; and lays on a Plaister cut in the same fashion with the Bladder.

If you would cut the Plaister right, you must take a piece of Linen that's two thirds of an Ell long, and half an Ell broad ; fold it sideways twice successively, then fold it a third time in the Angle of the close Plaits, and at last cut through the back of these Plaits about three Fingers-breadth under the Corner. The Compress, which must be of four Doubles, should be cut in the same manner with the Plaister, and applied next by the Surgeon. In the mean time, the whole Dressing must be kept upon the Part, as tight as two Hands can make it.

After that, the Surgeon lays on four longitudinal Compresses half an Ell long, and of the breadth of three Fingers, placing them cross-ways over one-another. Then he makes
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the Edging with a Roller with one Head, about five Ells long, and of the breadth of four Fingers. He applies the end of the Roller above the *Rotula*, and then makes two circular Rounds: Then he runs it from before to the hinder parts, along the middle of the Wound, and passes under the Ham, where he makes a renvers'd Turn. After that, he descends upon the Wound, and then re-ascending above the *Rotula*, where he makes a renvers'd Turn, he descends again upon the Wound. After this, he re-ascends by the Ham, and makes another Renverse; then he repasses over the Wound, and continues in the same course both upwards and downwards, rising still higher and higher, till he comes at the Groin, that all the Apparel and Dressings may be cover'd. This is the true Practice of those who are most vers'd in this Affair.

But as for the young Surgeons, that have not much Experience, I would advise them to make use of two Rollers, one with one Head, and another with two. They must begin with applying the Roller with one Head above the *Rotula*, where they make two circular Rounds; then they pass by the middle of the Wound, and circulate round with small Edgings, ascending all along the Thigh, and covering the Dressings.

Then they must make the *Capeline*, with the Roller with two Heads, which they hold with both their Hands, and apply it to the posterior part of the Member that was cut, upon which they make a circular Round, and with one of the Heads they make a Renvers'd Turn, passing from behind forwards over the middle of the Wound ; and with the other Head they circulate above the Head that made the Renverse round the lower part of the Thigh. This done, they continue to make a renvers'd Turn from before to the hinder Parts, covering the Wound, and with the other Head they make a Renverse from behind forwards. Thus they continue to make renvers'd and circular Turns both above and below, and cover the whole Wound by Edgings, as in the *Capeline* of the Head and the *Clavicular*.

Here you are to observe, that if you make an Amputation of a Leg at Night, you must hold the Stump for four or five hours, and if you apprehend an *Hemorrhagy*, it behoves you to hold it all Night long ; that is, unless you have cast Ligatures upon the Vessels ; for if you have, there's no occasion to fear a Bleeding.

CHAP. XLVII.

*Of the Dislocation of the Perone, and
its Bandage.*

TO compleat this Treatise, it remains to speak of the inferiour Extremity of the Foot; but before I enter upon that Subject, 'twill be proper to insert a Word or two of the Dislocation of the *Perone*, which is articulated both above and below with the *Tibia*. The lower Neck of the *Perone* is receiv'd in the external lateral Cavity of the *Tibia*, and at the upper end it receives a small Eminence of the *Tibia*. At the Bone it has a double Articulation, one with the *Tibia*, and the other with the *Astragalus*; and the only Dislocations 'tis capable of, either above or below, are the *Anterior* and *Posterior*. The Sign of its being dislocated forwards, is an Eminence upon the lower and fore-part of the *Tibia*, towards the inner Ankle. When the Dislocation flies behind, there's an Eminence near the Heel. The Dislocations at the upper end are very umfrequent.

If 'tis dislocated at the lower end, we order one Servant to take the Foot in his two Hands, and rest the Patient's Heel upon the Ground, or some solid thing, and another Servant to clap a single Noose upon the up-
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per and external lateral part of the *Perone*, at the place of its articulation with the *Tibia*: Then we take a piece of List, and fold it in two, and cast a running Knot upon it, to be applied to the upper and external part of the Leg, upon the *Perone*. After that, the two Heads of the Noose must be pull'd with a force, and the Surgeon pushes the Bone with his two Hands outwards, if the Luxation was inward; and outward, if the Dislocation was external. If the *Perone* is dislocated at the upper end, it must be push'd on each side, by clapping a Noose upon the lower part.

The Bandages must be *Chiaste's*, both above and below. When the Reduction is made, the Patient must keep up forty Days.

CHAP. XLVIII.

Of the Dislocation of the Foot.

THE Heel may be dislocated in the internal lateral Part, but very rarely in the external, by reason that the Articulation of the *Perone* with the *Astragalus* hinders it from starting to the outside.

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In order to set it, place the Patient upon a low Chair, and order a Servant to clap a Noose under the Sole of his Foot, pretty near the Heel, and then cross upon the fore-part, and pull upwards the two Heads, one in each Hand; then let the Surgeon push the Bone from the inside outwards. The Bandage is the *Sandal*, describ'd above.

The Bones of the *Tarsus*, the *Metatarsus*, and the Toes, are capable of being fractur'd; in which case they must be put to rights like the Bones of the Hand, by causing a Servant to hold the Patient behind, so as to make him stand upright, and rest the Sole of his Foot upon the Floor, or a Board; after which he Surgeon pushes the Bone from above downwards, or from the Side to which they're started. This done, he covers the Foot with a Linen Cloth, and a Compress of four Doubles, dipp'd in *Oxycrate*, and besmear'd over with a Defensive. The Bandage is the *sandal*.

C H A P. XLIX.

Of the Dislocation of the Bones of the Tarsus, the Metatarsus, and the Toes.

THE *Tarsus*, *Metatarsus*, and the *Toes*, may be dislocated several ways, as well as the Bones of the Hand. The Bones of the *Tarsus* may be dislocated to the inside and the outside, but not sideways, by reason that they rest one upon another, and have a Joint-Stay. The three Bones of the *Metatarsus* suffer Luxation only to the outside or the inside. The Bone that sustains the great Toe may be dislocated forwards, backwards, and sideways ; and the Sustainer of the little Toe is expos'd to the same hazard. The other Bones of the Toes may be dislocated every way, whether forwards, backwards, inwards, or outwards.

In order to reduce these Bones, let the Patient be held upright in a Man's Arms, so that the Sole of the Foot may rest firm upon the Floor, and let the Surgeon push the Eminence of the Bone from that side on which they lie in their preternatural state. If the Bones of the *Tarsus* are slipp'd out to the inside, you must take a Rolling-pin, or a piece of round Wood, and make the Patient rest the Sole of his Foot upon it as firmly as ever he can, and move

move his Foot several times on the resting Point.

This sort of Accidents commonly perplex us more than Fractures, upon the account that we can't limit the Time of the Cure. Upon this Occasion we use *Roses*, *Pomegranate-flowers*, and *Linseed*, boil'd with harsh *Wine*: After the Decoction is taken off the Fire, we add to it *Oyl of Roses*, and with the Liquor of this Decoction, very hot, do we rub the Patient's Foot for a considerable space of Time. We likewise cover the Compresses with the Substance of these Ingredients thus boil'd, and so apply it very hot to the Foot. The Bandage is the *Sandal*.

I shall now conclude this Treatise with the History of a grievous *Disorder in the Foot*, which may afford Instruction to *Young Servants*, how to employ their Judgment in managing hard and solid Parts.

Some Reflections upon a grievous Disorder in the Foot.

SOME Years ago I was call'd to a young Man in the Country that had an Illness in his Foot. All the Toes of the Foot were livid and cold, and he could assign no Cause for it, unless it were his having leap'd and jump'd

jump'd too briskly at some Play usual in their Country, or else his having held his Feet in Water.

In the beginning I dress'd him three times a Day, with such Remedies as are proper to resist Corruption, such as *Aloes* and *Myrrh* dissolv'd in *Egyptiacum* and the best *Spirit of Wine*. Notwithstanding all my Precautions, and a strict Regimen, the Corruption and Gangrene got to the *Metatarsus* on both sides of the Foot. Upon this I propos'd to Mr. *Binnise*, to have the Foot cut with a Wedge before the Gangrene reach'd the *Metatarsus*, upon the Plea, that 'twas better to have half a Foot and an Heel, than a Wooden Leg: He reply'd, That it behoved us to cut the Toes one after another. But the Gangrene advancing apace, I cut off the gangren'd Part with a Knife made of an old Sword, the Edge of which I had caus'd to be somewhat thick, that it might be capable to resist, and not turn and blunt in cutting the upper Extremity of the Bones of the *Metatarsus*, for I consider'd, they are thicker there than in any other Part I had likewise caus'd a Wedge and Mallet to be made on purpose.

After causing the Patient to advance to the side of the Foot of the Bed, I order'd a Servant to hold him behind, and two other Persons to hold him, one on each side.

Having

; fix'd my Block upon a firm Stool, im lay his Foot upon it, and press on it with all his Strength : Then I Knife in my left Hand, and apply'd upper part of the *Tarsus*, half the of a Finger above the Gangrene : t in this posture, I brought down t in my right Hand with all my n the back of the Knife, which ran ull half an Inch into the Block.

very instant I cauteriz'd the Bones tle square Cautery, of the breadth ngers, and three Fingers-breadth in I had two of 'em, the which were -hot one after another with all the n possible : And then indeed he felt lent Pain, and cry'd out prodigi-

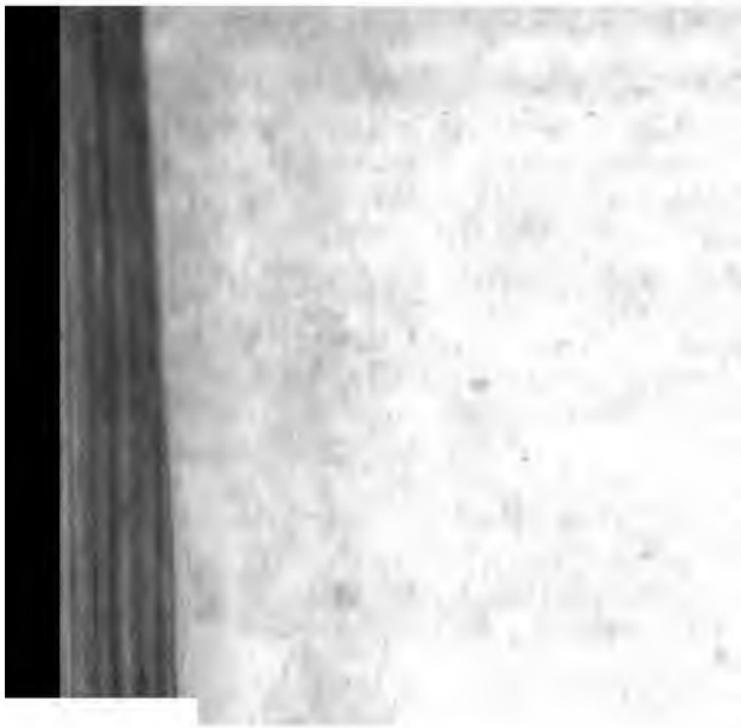
ou must observe, that we had not of Blood in this Operation, notwith- cut upon the quick.

st thing I apply'd was a grand Ano- iedy, consisting of nothing else but of Eggs, which ought always to be pon great Pains occasion'd by Inci- over'd three or four Pledgits with ine, as well as two Compresses dipt ery hot ; this done, I wrapt up the : Foot, and winded it with a sort of

At the end of fifteen Days I apply'd the Actual Cautery again, in order to produce a good and a firm Cicatricc; and two Months after the Incision he was perfectly well, and walk'd without Lameness. I keep his Foot still by me.

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